Table 2

Distribution of Vocational Teacher Education Funds in Michigan

For Year Ending June 30, 1961

Service	*Amount*	*Percent*
Administration	$ 4,587.17	2.0
Agriculture	29,693.27	12.9
Distributive	15,915.10	6.9
Guidance	41,577.27	18.1
Homemaking	37,032.64	16.1
Office	12,416.44	5.4
Statewide evaluation project	25,000.00	11.0
Trade and industry	63,446.94	27.6
Total	$229,668.83	100.0

During the past 3 years, $25,000 of teacher training funds has been used each year to finance a statewide evaluation study of vocational education. One of the responsibilities assigned to the Vocational Education Evaluation Project by the State Board of Control was to study the use of vocational education funds in Michigan. As a part of this study, a recommendation may be made to the Board that reimbursement for on-campus teacher education courses be gradually withdrawn. These funds could then be used for such things as research, in-service education, preparation of instructional materials, and other special projects that the institutions would not ordinarily undertake without extra financial assistance. These recommendations are based upon a study in which the institutions were asked to indicate which teacher education responsibilities they would assume depending upon reimbursement practices.

If these recommendations are adopted and put into effect, they could have a profound influence on the future of vocational teacher education in Michigan. It seems likely that a great deal could be accomplished that heretofore was impossible due to lack of financial support for special activities and research.

Certification of Teachers

In addition to the regular Michigan teaching certificate, teachers of reimbursed vocational courses must hold valid vocational certificates covering their specific teaching fields in order that local boards of education may receive reimbursement on teachers' salaries from vocational education funds. Qualifications for vocational teachers include both educational and work experience requirements. Until recently teachers in both secondary school and community college programs were required to be certified. However, a recent opinion rendered by the State Attorney General states that teachers in community college programs no longer need to hold teaching certificates in Michigan.

As far as vocational education is concerned, this changed policy will have little effect on the quality of instruction. Vocational teachers in the community colleges will still have to meet the minimum qualifications in their respective teaching fields for initial employment. However, additional professional course work, which is required under the certification procedure, is no longer required of community college teachers.

Types of certificates. In the case of secondary teachers, it is the responsibility of the individual teacher and the local board of education to maintain the validity of vocational teaching certificates. Three types of certificates are issued by the State Board of Education for vocational teachers: the vocational secondary provisional, the vocational secondary permanent, and the vocational special. The vocational secondary provisional is issued to qualified individuals upon graduation from college and entitles the holder to teach in the public schools. Upon completion of three successful years of teaching, within 5 years after issuance of the vocational provisional certificate, and after having taken additional professional course work, a teacher is eligible for the vocational secondary permanent certificate. The permanent certificate is valid as long as the holder teaches successfully 100 days out of every 5 years. Vocational special certificates are issued to vocational teachers who do not fully qualify for the provisional or permanent certificates provided that they meet certain minimum qualifications. The vocational special certificates are designed to provide for emergency conditions or for teachers of adult classes who are skilled in their occupational fields, but lack the professional teacher education courses.

Individuals obtain certification from the State Board of Education through the institution with which they wish to affiliate. The institutions advise their students regarding certification requirements. Individuals who come to Michigan after having received their training in another state are assisted in securing any additional course work needed.

Research

Division of Vocational Education

The Division of Vocational Education has a small research section headed by a research consultant. The position of research consultant for vocational education is not unique with Michigan, but few states have such a position.

The primary purpose of the Division's research activities is to stimulate and to help coordinate vocational education research throughout the state. The activities may assume a number of forms. Technical consultative assistance for vocational education research is made available to local public schools upon request. A limited amount of basic research is conducted in the field of vocational education by the research consultant, and the consultant staff may and often does conduct studies of its own. These studies are not only valuable in themselves, but they may help to stimulate and encourage

the universities and colleges of the state to conduct needed research in vocational education.

Perhaps the most outstanding example of vocational education research in which the State Department of Public Instruction is performing a major role is the study known as the Michigan Vocational Education Evaluation Project going on at the present time. This project was undertaken at the request of the State Board of Control for Vocational Education. The purpose is to make a complete evaluation of vocational education being taught in the Michigan public schools today. Major responsibility for the project was assigned to Michigan State University, but almost all of the major universities of the state have been assigned significant responsibilities for various phases of it. Over 200 vocational educators, administrators, and general educators have been involved in it. Indeed, involvement of such a large number of people is viewed as one of the major values of the project.

The cooperative relationships generated by this project have been heartening. The executive committee for the project has been able to mobilize resources from many sources and to view the critical problems facing vocational education from a perspective that utilizes the best in vocational education leadership that the state has to offer. It would be unfortunate to lose the "head of steam" which this project has developed. Probably it can be safely said that at no prior time has vocational education in Michigan had a more favorable climate for progress through research.

If, as was previously mentioned, a portion of teacher education funds could be continually used for research, then it would seem that some type of advisory group would be needed to suggest priorities.

Colleges and Universities

Research has always been one of the major functions and strengths of our colleges and universities; Michigan is blessed with some of the outstanding educational researchers in the country. Most of the research in vocational education in Michigan, as in other states, is conducted by our colleges and universities. The staffs of these institutions do considerable research and, in addition, they advise graduate students in their research activities.

Because of their resources and research experience, the colleges and universities are often able to secure funds for research that are not readily available to other educational institutions. An example of this is a recent grant of $25,000 from Cooperative Research Program funds through the United States Office of Education to The University of Michigan for a study to determine the way in which various groups, such as labor, management, agricultural, and other lay persons perceive vocational education. Incidentally, this study is a direct outgrowth of the statewide Evaluation Project. Another study, also financed from Cooperative Research Program funds, a study of technicians in industry, was recently completed by Michigan State University.

Local Schools

It has been the policy in Michigan to search continually for new knowledge and new applications of existing knowledge in the operation of vocational education programs. In keeping with this philosophy, the Division of Vocational Education encourages and assists schools in developing pilot or experimental programs. Currently, three such programs are being operated. One is an experimental study comparing the accomplishment of students in a two-hour machine shop class with those in a three-hour class. Another project is attempting to develop a work-study program for students with less than average mental ability. The third is a work-study experimental program for students desiring to enter those farm-service occupations in which knowledge, skills, and understandings from business, agriculture, and trade and industry education are needed.

The Future

We must never be satisfied with our present educational program. We should maintain a healthy attitude of discontent, but with the secure feeling that our attempts to meet constantly changing vocational needs will be successful.

There are vast areas of unmet training needs. Relatively few programs have been directed to the unemployed, to women workers in occupations other than sales or clerical, to early school leavers, to workers in many of the service occupations, and to retarded or slow learners. As was previously observed, our school programs have been directed primarily to the college-bound boy or girl. There is a growing awareness on the part of educators that we must also meet the needs of employment-bound youth.

Unemployed Workers

Training programs now being developed through the Area Redevelopment Act and the Manpower Development and Training Act should be considered as mere beginnings in providing for the retraining needs of the unemployed. Ideally, we should not be in the position of having to wait for a worker to become unemployed before he is retrained for another occupation. We must develop techniques and procedures to determine in advance the future employment needs arising from automation and technological progress. The nature of the Michigan economy is such that unemployment will be prevalent in the state for some time to come. We must develop a long-term retraining program that will reach the majority of those needing it.

Retraining classes developed under the ARA and MDTA programs will reach relatively few of the unemployed. It has been estimated that, in Michigan, about 1 out of every 40 unemployed workers will be enrolled

in such classes. In order to reach the others, considerably more effort will have to be expended. We will also have to gain a much better understanding of the psychological and sociological problems of the unemployed worker. For some, we no doubt must think in terms of providing basic educational skills prior to training them for occupational competence.

Technicians

Highly skilled technicians are found in all fields — agriculture, home economics, and business, as well as industry. The National Defense Education Act of 1958 stimulated the development of programs for the training of technicians in industry and, to some extent, technicians in business occupations. Relatively little, however, has been done to develop training programs for technicians in the other fields. The great need for the preparation of large numbers of technicians is evident. Michigan must meet this challenge of our changing society.

Some kind of cooperative planning is needed in regard to the development of technical training programs in Michigan. High quality technical occupational curricula are extremely expensive to develop and maintain. A coordinated plan should be developed in which the community colleges and other state-supported institutions of higher learning would agree on the need for the various technical curricula and on the institution or institutions in which such curricula should be developed.

Those institutions that are now or will be providing training opportunities for technicians need to examine critically the existing curricula, to determine needs, and to develop cooperatively the programs that will not leave Michigan "shortchanged" in its pool of highly skilled manpower.

Vocational Guidance and Counseling

All evidence seems to indicate that the status of vocational counseling in Michigan high schools is at an all-time low. Many counselors come from academic backgrounds. They have had relatively little work experience outside of the school program. As a result, they do a good job in that aspect of their task with which they are most familiar — guidance for college-bound students; they do a poor job in that aspect with which they are least familiar — guidance for employment-bound students. In view of our shortage of technicians and skilled manpower, it would appear that somehow we must remedy this situation.

Existing training programs for counselors in our institutions of higher education do not reflect much concern for guidance responsibilities in terms of employment-bound youth. This is tragic when we consider that roughly three-fourths of all Michigan students entering the ninth grade complete their formal educational preparation at or before high school graduation. High school and post-high-school counselors should be familiar with the many opportunities available to students through vocational education.

We should provide guidance, counseling, and placement services to young persons at least through the age of 21. Most counselors do a pretty good job of helping those who go to college secure admittance to the institution of their choice. Rare indeed, however, is the counselor who does a thorough job of helping employment-bound youth secure placement in the occupations of their choice.

Every school should have accurate up-to-date information on former students. Schools must improve their followup techniques. Effective followup studies are a must for a sound guidance and counseling program.

A high school diploma is not an automatic ticket to a job. It is often easier to gain admission to college than it is to secure a job. Young people are in need of assistance in deciding on a vocation, in preparing for it, and finally in securing satisfactory placement.

Research

Michigan vocational education research efforts have increased markedly in recent years. The Michigan Vocational Education Evaluation Project has resulted in a mobilizing of research effort never before attained. Plans must be made to continue the cooperative effort which this project has generated.

It is hoped that certain funds will be available for use by teacher education institutions for special projects including research. Criteria will have to be developed for the selection and funding of projects. Some type of committee should be developed to represent the teacher education institutions and to act in an advisory capacity concerning priorities for the use of funds. Such a group might also perform a coordinating function in determining needed research and in sharing the results of research.

It is anticipated that vocational education research efforts will be considered by the recently formed Michigan Educational Research Council, which will help coordinate all educational research efforts in the state.

Women Workers

By 1970 nearly one-half of all women aged 35 to 64 in the United States will be in the labor force, with the largest increase coming in the 45 to 54 age group. One out of every three workers will be a woman. Mothers now number almost half of all employed women. According to the Michigan Employment Security Commission, it is expected that about 30 percent of Michigan's work force will be women. The average working woman enters the labor force in her late teens or early twenties; she works about 4 years and then retires temporarily following marriage and the birth of children; at about age 35 she will return to the labor market. This situation produces an increasing need for retraining and upgrading programs. Working women also need assistance with home management problems as they fill their dual role of worker and homemaker. Much more emphasis

is needed upon adult training, particularly in office, sales, and service occupations, if we are to meet the needs of our women workers.

Early School Leavers

With the increased emphasis upon acquiring a college education in recent years, the persons who have not received much consideration are the boys and girls who are not going to college. A large number of young people must be provided with some type of specific and useful occupational training before high school graduation. Present high school programs are not adequately meeting the needs of a substantial proportion of youth. Vocational educators and general educators must work together to determine the kind of educational program that will meet the needs of those boys and girls who are not being motivated by present programs because the answer is not entirely more or a different kind of vocational education.

Contacts With Industry and Business

One of the characteristics of outstanding vocation. education programs is the involvement of agriculture, industry, and business in the development and operation of such programs. In fact, leaders in vocational education implore local communities to make extensive use of advisory committees made up of employers and workers.

The use of advisory groups from industry and business is just as important on the state level as on the local level. The use of industry-wide advisory committees or joint vocational education-industry groups can result in improved and more meaningful state-level assistance to local schools. Such groups can be instrumental in preparing instructional materials, helping to sponsor in-service teacher education programs, assisting in the determination of training needs, and setting an example for local schools to follow in working closely with business and industry. Even though Michigan has made use of such industry-wide groups in the past, considerable additional use of them is needed at the present time.

Multiservice Programs

Many occupations have grown or changed in such a way that they now require knowledge, skills, and understandings in not only one but several of the traditional vocational education fields. As was pointed out earlier, agriculture and business are two fields that have a contribution to make to many of the same occupations. In addition, new occupations that do not fit readily into one of the established traditional vocational fields are constantly appearing, and vocational education will have to develop new programs based upon the educational requirements of these new and changed occupations.

Area Programs

It has been implied throughout this paper that our present vocational education programs fall far short of meeting present-day occupational training needs. The vast majority of Michigan school districts do not offer truly comprehensive educational programs. Most districts do not have sufficient financial resources or students to afford comprehensive programs.

At the present time there are 537 high school districts in Michigan. If we consider the offering of reimbursed vocational education classes as one criterion of comprehensiveness, then it should be noted that only 12 school districts offer programs in all 4 fields of agriculture, homemaking, business, and trade and industry.

If school districts are to provide students with the opportunity to become competent in the occupation of their choice, a way of combining district resources will have to be found. Consolidation of high school districts may be a possible answer; but it is doubtful whether most Michigan school districts will ever attain sufficient size to be able to meet the educational needs of all their students. This is particularly true if districts continue to operate vocational education programs individually.

The concept of area vocational education has been present in the United States since the passage of the Smith-Hughes Act in 1917. It is based upon the philosophy that all qualified persons should have an equal opportunity to participate in vocational education programs of their choice regardless of the geographical location in which they reside, and regardless of their economic status or that of the region in which they live.

Michigan has a number of area vocational education programs being operated on a post-high-school level through community colleges and other institutions of higher education. Perhaps our secondary schools should consider the advisability of establishing area vocational education programs of their own.

Use of Funds

Michigan is seriously studying the current use of vocational education funds. The statewide Evaluation Project has addressed itself to this problem, and vocational educators have been giving serious thought to the manner in which the very limited funds available can be used to maximum advantage.

The use of vocational teacher education funds is receiving careful consideration. Is there any reason why we should reimburse those regular teacher education courses that the institutions would continue regardless of reimbursement? Could these funds be better used for those teacher education functions that the institutions would not perform without extra financial assistance? Rather than reimbursing regular courses, these funds could possibly be used to reimburse more adequately vocational teacher educators in providing consultative services through visits to local programs, developing and distributing instructional materials, conducting special workshops and conferences for teachers, and conducting research and special studies. Procedures for the use of teacher education funds for these purposes must be

developed, and priorities must be determined. The institutions themselves should help determine these procedures and priorities.

The federal vocational education acts were originally designed to stimulate the development of vocational education programs. This original purpose has been lost in the practice of maintaining programs within a fixed pattern. Some vocational educators are asking whether we should place more emphasis on stimulation and development.

Many crucial questions are being asked concerning high school vocational education programs. Should not vocational education courses be as basic as college preparatory courses in our high school curriculums? Should vocational courses be limited to the 11th and 12th grades? Can subjects below this level be justified as anything except general or basic education? Should we continue to reimburse established programs? Should we use funds only for the development of new programs? Should we use funds for the purchase of equipment? We will have to find satisfactory answers to these and many related questions.

Post-High-School Programs

Vocational education at the post-high-school level is at a critical point. There is no question of need. We must develop the skilled and technical manpower so desperately needed in modern society. Our community colleges are the most promising type of institution to meet most of the increased need for post-high-school vocational education. If our community colleges are to fulfill their role, they must become large-scale units and function as parts of a statewide coordinated system. These institutions must assume, on a broad basis, their responsibility for technical education.

We cannot place the burden of developing high-level technical programs on already financially strapped local school districts. Since the state and, in many fields, the nation, make up the "community" for which such programs are provided, the local community cannot be expected to bear the major share of the financial burden for providing them. We need greatly increased state support for vocational education programs at all levels, and the development of high-quality programs in particular must not depend upon the wealth of individual school districts.

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XV. An Analysis of Vocational-Technical Training in Minnesota

By William C. Knaak[1]

Objectives

A summary statement of the objectives of vocational education in Minnesota might be: to provide opportunities in all phases of vocational-technical education for persons who are of sufficient age and maturity to profit from specific occupational training.

This means to provide training for boys and girls 16 years of age or older and to make it available to them for the rest of their working lives.

It means to provide training for individuals ranging from those who are barely above institutional care to those who could rank high in regular college courses if their interests and orientation had so directed them.

Training must be provided for all trade, technical, distributive, office, agricultural, and homemaking occupations. The level of training must range from simple operator skills for those with limited abilities to highly technical subject matter for those capable of making broad application of basic knowledge.

All vocational-technical training must be occupation oriented. Training that is not so oriented will lose its objective and not be worthy of the name. Some technical training is now provided that has employment in "clusters" of occupations as its objective. When this is the case, care must be taken to determine that the basic "core" of training given will, in fact, quality the trainee for employment.

Training must meet the needs and requirements of both existing industry and new industry. In Minnesota, not a large market area, industrial expansion is occurring largely in the "brain industries," such as electronics. Training must anticipate this trend.

Employed adults must have the opportunity to take training in order to advance in their occupations and keep abreast of the times. A special effort needs to be made to encourage the unskilled worker to take training because his position is precarious. It has been said that today the unskilled worker who carries his lunch is an optimist.

Training must be provided for the unemployed whose skills have become outmoded or who live in chronically "depressed" areas and must qualify for employment elsewhere

Welfare cases should be trained to become self-supporting whenever possible. At a recent state welfare conference in Minnesota, the Governor challenged the group to abandon its caretaker role and concentrate on rehabilitation. At the same conference the Commissioner of Welfare cited the need for helping the "vocationally handicapped" — persons with physical, mental, or emotional handicaps who cannot get jobs.

Women make up a substantial part of the labor force today, and all indications are that they will continue to do so. Women are to be found in large numbers in light metals and fiberglass fabricating plants as well as in office, distributive, and service occupations. Women tend to work a few years, drop out to raise a family, and then reenter the work force again. This may require refresher training. The new dual role of homemaker and wage earner presents some difficult problems for women to face, and it presents the vocational home economics educator with a real challenge to help the homemaker-wage-earner understand her dual role and function properly in it.

Education System

Minnesota's public school system is under the jurisdiction of three separate governing boards. The State Board of Education is appointed by the Governor with confirmation by the State Senate. The State College Board is appointed by the Governor with confirmation by the Legislature, and the University Board of Regents is elected by the Legislature from specified areas in the state. Each board chooses its own executive officer, and each board functions independently of the others. Although it has never been a publicized problem, the three boards are, in effect, in competition with each other for

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funds in the Legislature. The Legislature recognizes this competitive situation; it also recognizes that there is a possibility of duplication of services since all three boards are responsible for some higher education.

Because of the duplication potential, the 1959 Legislature authorized the appointment of the State Liaison Committee on Higher Education, made up of three representatives each of the State Board of Education, the University Regents, and the State College Board. This committee is responsible for resolving such differences and duplications as may tend to develop, with the underlying implication that, if it cannot do so, the Legislature will, through legislation.

The State Department of Education

The State Board of Education, the Commissioner of Education, who is appointed by the Board, and his staff make up the State Department of Education. The present format of the Department had its beginnings shortly after the passage of the Smith-Hughes Act in 1917, when a State Board for Vocational Education was appointed. After the State Board of Education was organized, it became also the State Board for Vocational Education, and the functions of the two boards became merged.

The jurisdiction of the Board ranges from kindergarten through junior colleges and area vocational-technical schools. To make intelligent policy decisions in such a broad spectrum of educational institutions with varied objectives requires considerable depth of experience and much conscientious study.

The Department of Education carries on all business with local school districts through the school superintendents, who are the legal officers of the local boards of education. Each local board has broad powers to provide for the education of the youth in its district. Some local boards are responsible for the education of children from kindergarten through junior college and area school, including thousands of adults in vocational evening extension classes. With such a breadth of educational responsibility, many local boards have to rely quite heavily upon advice from school administrators for decisions concerning vocational education. Local boards are elected by the legal voters of their respective districts, and they reflect the attitudes of the electorate. It is not uncommon, therefore, to have persons on a local board who are indifferent to, if not actually hostile toward, vocational education or certain areas of it.

The Minnesota Legislature adds substantially to the amounts of federal aid available for vocational education under the provisions of the federal education acts. In fact, the legislative allowance for 1961-62 was more than $3 million. The specific distributions of these aids, made by the Board of Education, will be discussed in connection with specific vocational curriculum areas.

The High School and Vocational-Technical Training

A reorganization of school districts into larger districts has been strongly encouraged in Minnesota on the theory that districts should be large enough and have enough resources to provide complete education, including vocational education, for youth from kindergarten through the 14th year. As a result, there has been considerable reduction in the number of ungraded elementary school districts in the state, but actual progress in redistricting secondary schools has not been significant. The number of small secondary schools without sufficient resources or students to support a complete program, particularly a complete vocational education program, remains high. Attempts by the Department of Education to formulate and enforce rules and regulations designed to compel high school districts with small enrollments to join with other districts have been largely nullified through action by the Legislature.

High school classification requirements for state aids provide some "encouragement" for vocational education. Foundation aid is paid to the local school district on the basis of pupil units. It is the difference between what the local district can raise per-pupil unit with 19 mills on its adjusted assessed valuation and the average expenditure per-pupil unit in the state. Pupil units are determined as follows: Kindergarten students, one-half unit; elementary students, one unit; secondary school and area vocational school students, one and one-half units. If a school district has a recognized junior high school program with three "special" departments selected from agriculture, home economics, business, or industrial arts, it may qualify for the one and one-half unit rate for foundation aid. The "encouragement" for vocational education is the payment of aids on the basis of one and one-half units per student in "approved" high schools and in junior high schools with special departments.

The equalization factor in the per-pupil aids has not been substantial enough to bring about significant balancing of the amount of money available to all school districts. Furthermore, no state aid is provided for plant construction and debt service, and this penalizes vocational education because the cost of constructing vocational education facilities per-pupil unit is significantly higher than is the cost of constructing most other school facilities.

Direct reimbursement for vocational salaries, travel, and, in some programs, equipment has been more influential than foundation aid in the encouragement of vocational education. The amount of money needed during the biennium for the customary aids for vocational education is estimated by the State Director and submitted to the Commissioner and State Board. After their approval, the estimate becomes a part of the total state aid request. The Minnesota Legislature has con-

sistently supplied all of the funds requested for vocational education. In recent years there has not been any arbitrary cut in or even quibbling over the amount to be spent for vocational education.

The net result of the described aid policies is that the amount of vocational education being provided by high schools varies considerably among high schools and among services. The "comprehensive" high schools, in general, have not been able to provide adequately for vocational-technical training in all fields. Their participation in approved reimbursable vocational-technical programs in 1961-62 was as follows: technical, 0 percent; trade and industrial, 4 percent; distributive and other cooperative part-time training programs, 18 percent; agriculture, 58 percent; office, 72 percent; and home economics, 88 percent.

Home economics education. More high schools teach home economics than any other vocational subject. There are several identifiable reasons for this — and perhaps other reasons not so readily recognized. The need for training in homemaking is universally respected. The objectives of the program are easily understood by local boards of education. Furthermore, home economics is required of an approved junior high school, and with a little additional effort, as observed earlier, the school can qualify for senior high school state and federal vocational aids. The one-hour block of time required for classes also fits readily into a standard secondary school class schedule. It is a well-accepted elective for girls planning to go on to college as well as for girls who will enter employment or become homemakers. Vocational aids offered are typically 50 percent of the day instructor's salary and travel and 75 percent of the adult evening instructor's salary and and travel. State money spent for home economics in 1960-61 totaled $751,985, as compared with $168,321 of federal funds. Home economics has had the benefit of strong state leadership over a period of years, and a solid majority of the departments are physically well equipped according to state standards.

A strong Future Homemaker of America program, highlighted by state camp activity, district meetings, and a state meeting, provides excellent opportunities for leadership development. It has also served as a proving ground for future home economics teachers.

Office education. Office training gained an early start in Minnesota high schools. The fact that many high school graduates enter office work, both at home and elsewhere, in "prestige" white-collar occupations is readily understood by school administrators and parents. Administrators are also somewhat familiar with basic office occupations. Many of the courses, such as typewriting and bookkeeping, have considerable general educational value, so that there is little concern about whether a student profits from taking such courses. For the most part, office education classes fit nicely into the academic schedule, and they can accommodate about as many students as can a regular academic class. The last factor helps to keep costs down even though equipment costs are somewhat higher than those for other classes. Availability of office education teachers has never been a problem.

The field of office education, however, has had several handicaps. The lack of federal recognition and federal funds has made it difficult to obtain and keep an adequate state supervisory staff. In fact, at the present time, there is no consultant on the state staff who has office training as a major responsibility. Because of this, attention to curriculum revision and standards has lagged.

High school teachers in office education have never had to meet occupational experience requirements common in other vocational fields, and many of them have not had office experience. As a result, these teachers tend to align themselves with academic teachers, stressing the general education values and minimizing the vocational "bent" of their courses. It also means that the instructor often is not able to supply relevant occupational information to the students. Offerings in small high schools are frequently limited to one or two courses, not enough to qualify graduates for job entry. In general, although office education is the second most prevalent vocational course in Minnesota high schools, there is still much to be desired in terms of meeting the needs, especially since there is an increasing need for trained office workers, as Employment Security research figures indicate.

Agricultural education. Minnesota has probably come closer to meeting the vocational training needs of the state in agricultural education than in any other vocational field. A majority of local school boards in the state are made up of farmers or of townsmen who are responsive to farm voters. It has been fairly easy for them to see the value of agricultural training in their home areas. It has also been to the farmers' advantage to participate in the adult vocational agriculture programs. Usually, only its small size or lack of resources keeps a rural community from developing a vocational agriculture program. Aids provided include 50 percent of day instructors' salaries and travel and 75 percent of adult instructors' salaries and travel. State money spent on agricultural education in 1960-61 amounted to $886,851, supporting $354,394 of federal funds.

The Minnesota Future Farmers of America has had excellent leadership, and it serves several purposes. It provides a club medium through which enriched instruction may be carried on. Through contest, camp, and local activity, it has provided many opportunities for F.F.A. leadership training. Finally, F.F.A. is of tremendous public relations value to vocational agriculture. At local, state, and national levels, the blue-jacketed, well-spoken F.F.A. representatives gather solid support from industry, commerce, and agriculture

for the vocational agriculture program as a builder of men, as well as for instruction in agriculture.

More than 90 percent of the teachers of vocational agriculture in the state are graduates of the University of Minnesota. This commonality of alma mater has provided the basis for a tightly knit state organization of teachers of vocational agriculture that is effective when working on state and national legislation for vocational education.

Agricultural education in Minnesota is faced by one gnawing, persistent problem — the decline of interest in agriculture by some rural youth. In poor or "marginal" agricultural areas, some principals and counselors report difficulty in convincing farm boys that it might be advisable to take agriculture subjects. They and their parents may be reacting to national publicity on the decline of opportunities in agriculture and to their own farm income situation. This difficulty usually appears in vocational agriculture programs that have weak instructors or poor facilities. But in some poor agricultural areas, even good instructors are having difficulty holding a minimum number of students. The small school experiences the most difficulty.

The first step in meeting the situation is usually to combine the various grade levels of agriculture in order to make a suitable-size class, and to assign the instructor to some teaching duties other than agriculture. With a part-day program, pressure then mounts to convert the agricultural shop facilities to industrial arts and other uses. It is not reasonable for a State Department of Education to insist that shop and classroom facilities be held open and available for agriculture when there are not sufficient agriculture students to utilize them.

Agriculture is still a substantial and influential industry in our state, and there are still opportunities in farming. But the indications are that the number of individuals needed in farming will continue to decline. On the other hand, the caliber of individual needed, particularly in management areas, will rise. There is also an expanding need for adult training, so that those presently in the farming business may keep up in the industry.

As for preparatory agricultural programs in high schools, it would seem that fewer programs, generally located in the larger centers, with emphasis on agriculturally related programs, might be a partial answer. This will be discussed further in the section on area vocational-technical schools.

Distributive and other cooperative part-time training programs. The first cooperative part-time training program in Minnesota was organized in 1945. At present, there are 87 such programs, classified as follows: distributive, 32; office, 26; miscellaneous trades, 8; diversified, 21.

Enrollment in high school distributive education programs in Minnesota has grown modestly, but steadily, to a 1960-61 enrollment of 682. Total enrollment of all cooperative part-time training programs was 1,624. All of these programs are under the supervision of the State Distributive Education Supervisor, although the trade and industrial state staff gives some help with miscellaneous trades.

The part-time training program has many educational advantages. It gives students the opportunity of career exploration in a meaningful way. It gives students an opportunity to apply the knowledge and skills learned while in school. It provides earn-while-you-learn advantages for students with parents of very limited means. It may help reduce dropouts. The program may reduce school costs because some of the "laboratory" facilities are provided on the job, and classroom space may be released for other uses. Available evidence seems to show that students who choose distributive education in high school and later elect to continue their formal education do as well in college as other students of comparable ability.

However, distributive education is not always readily accepted as an educational program by school administrators. The academically trained administrator sometimes rebels at the thought of giving school credit for work carried on away from the school. Furthermore, regular academic classes for part-time students must ordinarily be scheduled in the morning, thus curtailing the principal's schedaling freedom. There is also some reluctance to recognize such training as a bona fide program for persons of above-average ability, even though their interests and talents may orient them toward distributive education. Some school administrators believe that this program should be only for the potential dropout or for those who do not have collegiate ability.

The primary restrictive factor for high school part-time training programs in Minnesota has been the limited number of cities large enough to provide on-the-job training stations for this type of program. This has led to approval of "diversified" training, which combines distributive, office, and trades occupations into one program. Such programs meet some of the objectives of cooperative education, such as career exploration, but they can scarcely provide meaningful related training to such a heterogeneous group of students. In the judgment of the state supervisor, if a city is large enough to support a "pure" program, diversified programs should not be approved. Cooperative part-time training programs are ordinarily reimbursed to the extent of 50 percent of the day instructor's salary and travel and 75 percent of the evening distributive salary. Reimbursable part-time training programs in 1960-61 received $232,458 in state and local funds and $26,772 in federal funds.

Using state funds only, Minnesota has reimbursed part-time cooperative office training programs in a similar manner. These programs have proven to be the most "solid" of part-time training programs in terms

of the availability of good training stations (especially in metropolitan areas), the development of meaningful related training in school, and the high percentage of trainees remaining in the occupation after graduation. It is particularly effective in the field of clerical occupations. This is a vocational program that should be expanded in Minnesota and, we believe, is deserving of federal encouragement and support.

The miscellaneous trades part-time training program in Minnesota has never been extensive, and it is not expected to grow substantially. In metropolitan areas, apprentices are not permitted to enter most "organized" trades until they are at least 18 years old. This limits the availability of trade training stations and also the variety of occupations in which training may be given.

The Minnesota part-time training program also has a state club organization known as the Minnesota Diversified Vocations Club, which serves the same function as the F.F.A. and F.H.A. in providing opportunities for leadership training and social growth.

The teacher is a critical factor in the success of all vocational programs, perhaps even more so in cooperative part-time programs. The coordinator teacher must be effective in working with the "downtown faculty" as well as in instructing and counseling students. When coordinator teachers have been well trained, meet all qualifications, and are selected on a competitive basis, they tend to do a better job than persons of limited, minimum qualifications who are "promoted" to the position.

Twenty percent of the persons employed in Minnesota are in distributive occupations. The 7 percent of the state's high schools offering training in distributive occupations are not enough. It has been estimated that there are still at least 20 communities large enough to support distributive education programs which do not presently have them. A concerted effort to alert these cities to the needs of their youth is planned for next year.

A field instructor in distributive education is employed by the State Department of Education to help small communities meet their adult distributive education needs. This instructor travels extensively, organizing and teaching distributive classes throughout the state.

Trade and industrial. Most of the vocational trade and industrial training in Minnesota is offered in the 12 area vocational-technical schools, more specifically discussed later. On the average, these area schools are now offering about half of their programs at the high school level and half at the post-high-school level. More specifically, outside of Minneapolis, more than 60 percent of the trade and industrial enrollment is at the post-high-school level, while Minneapolis, offering a variety of 30 trade and industrial courses, and having the advantage of a large metropolitan labor placement market, has had continued success with high school trade and industrial programs. But it, too, is moving gradually into post-high-school programs in most trade areas. Trade programs in comprehensive high schools, with a few exceptions, have not been very successful. In fact, there were only 12 comprehensive high schools offering such programs in 1960-61.

The identifiable reasons for failure by local boards of education to adopt trade programs are varied, as might be expected. One is undoubtedly the confusion that exists in the minds of many local board members and some educational administrators as to the difference between trade and industrial training and industrial arts. It is not uncommon to talk to local board members who are convinced that they are fulfilling their responsibility for providing vocational trade training by offering a good industrial arts program. This is certainly understandable, particularly since industrial arts teachers are supervised by the state trade and industrial staff, and many of the industrial arts teachers are active members of the state vocational association. Furthermore, to a lay person or a general educator, the instructional equipment looks much the same as that found in a trade shop. The point is that industrial arts does not prepare a student for job entry, as vocational education must.

Once local school officials understand what a trade program is, there are other problems. A three-hour block of time may make scheduling of academic classes difficult. The thought of paying a tradesman without a degree a salary comparable to, or better than, that paid a staff member with a degree is often unpalatable. Instructional equipment and supplies are expensive, and space requirements may seem fantastic to a general educator.

There are educational limitations to high school trade and industrial programs. One of these limitations is the lack of breadth to the program. If school resources are limited to one trade program, should it be auto mechanics, or something else? Does this mean that everyone in the school who wants to learn a trade should be an auto mechanic? The result is that the enrollment in the course consists of boys who want to learn a trade, but not necessarily the one being offered. Decisions as to who will be enrolled in the class are often made by principals or counselors with little knowledge of the criteria for selecting students who can profit most from the course.

Some of the limitations of a single trade program in the comprehensive high school revolve around the instructor. He will often work a six-period day — one period longer than a normal teaching load. If he is paid extra for the extra period, staff resentment may follow. If he is not paid extra, the teacher may resent the extra time required. Working with vocational advisory committees and seeking placement opportunities for the graduates are two very important aspects of his job. Yet the importance of these aspects is usually not fully understood by his superiors or teaching colleagues.

His in-school load will be as large as or larger than that of the academic instructors, and the temptation to pass lightly over advisory committee and placement responsibilities is considerable.

Furthermore, Minnesota is experiencing a rural-to-urban youth movement common in many agricultural states. Many of the jobs for which trade training is needed are found only in urban areas. It thus becomes virtually impossible for a trade teacher to carry a full teaching load and still carry on advisory committee and placement activity away from his local community.

It has become the general conclusion of the state staff that one-teacher trade programs in outstate high schools are not generally effective, and no great effort is being made at this time to promote such programs in additional high school districts. Going programs are provided with supervisory and consultative services, but unless the school district has adequate resources to offer at least three trade programs with a full- or part-time coordinator, the chances for quality trade and industrial courses are not good. There are relatively few high school districts in the state capable of operating three trade programs without obtaining assistance under the area school law.

Successful high school trade programs are conducted in the area vocational-technical schools, which will be discussed a little later. At these schools there are qualified directors and coordinators as well as instructors who carry on the liaison work with industry. The school director, who is usually the immediate supervisor, understands the needs, problems, and responsibilities of the trade teacher; and he is able to provide much instructional assistance.

Trade programs in high schools are usually reimbursed for 50 percent of the day instructor's salary and travel and 75 percent of the evening instructor's salary. In 1960-61, the trade and industrial programs received $766,797 in state funds and $79,713 in federal funds. These amounts are for both high school and post-high-school programs. Federal money for trade and industrial education is very inadequate, and without considerable state aid there would be substantially fewer programs.

A team of 12 trade and industrial field instructors operating under the supervisors in the state trade and industrial vocational unit bring instruction in electrical, fire, and steam boiler safety to many outstate communities.

Guidance in the secondary schools. The National Defense Education Act of 1958 provided a tremendous boost to guidance in the secondary schools.

One of the most significant aspects of the improved counseling program is the increase in the number of certified counselors. Qualifications for a counselor's certificate include a valid teaching certificate based on a bachelor's degree, a master's degree, or its equivalent, with course work in specified course areas; a minimum of one year of work experience outside of education; and at least one year of successful teaching experience.

The results of this rapid increase in the number of counselors are becoming apparent. Although no research has been conducted to determine whether counselors are actually becoming more vocationally oriented, we do know that they now request a great deal more vocational literature, invite vocational directors to their schools more frequently, and refer more students to area vocational schools. The counselors built their April 1962 annual state conference program around non-college-bound youth.

This is not to imply that Minnesota counselors are neglecting the precollegiate students. Nor should it be inferred that there are no longer counselors in the state who put their total effort on academic educational counseling and neglect vocational counseling. It does imply that progress in getting well-trained counselors in Minnesota high schools has been made, and that, based on initial indications, the results will be favorable to youth needing vocational guidance and training.

Summary of vocational training in high schools. In summary, a number of variable factors determine the establishment and success of vocational training in the comprehensive high school. Essentially, these variables are (1) the size and wealth of the school district, (2) the orientation or "enlightenment" of local school boards and school administrators concerning vocational education, (3) the local need for the program, and (4) the ease with which the program can be worked into the regular academic schedule by school administrators.

It does not seem likely that the desired objective of having all school districts become large enough to accommodate kindergarten through the 14th year, including comprehensive programs of vocational training, can be reached soon enough to meet the accelerating job-training needs of youth. Nor does it seem that there is any hope that even a significant minority of high schools will provide trade or technical occupational training. In Minnesota it appears that we will lean even more heavily upon area schools for high school and post-high-school trade and technical training.

The Area Vocational-Technical School

The area vocational-technical school, the newest institution in public education in Minnesota, was authorized by legislative act in 1945. Since then, 12 area schools have been approved by the State Board of Education, two districts have completed surveys preliminary to securing Board approval, and inquiries regarding requirements for area school designation are increasing. Initially the area schools were largely high schools, but increasingly they are becoming post-high-school institutions.

Area vocational-technical schools had their inception in the failure of other institutions to provide the vocational-technical education needed by youth and adults.

Specifically, when the Legislature passed the area school law in 1945, the following conditions prevailed.

1. Only six high school districts outside the three cities of the first class offered preparatory trade programs. Ninety-three percent of the total enrollment in trade and industrial programs was in Minneapolis, St. Paul, and Duluth. Rural and small town youth had no opportunity to obtain trade or technical training unless their parents could finance them at a private trade school in the Twin Cities.

2. War production training had slackened, and regular evening extension trade and industrial training was at low ebb — only 660 such students were enrolled in the state. This was a serious situation because it occurred at a time when Minnesota's economy had swung toward industrial emphasis, and the employment effects of automation were becoming evident. Apprenticeship training was inadequate in many areas. The World War II years had seen a movement of skilled people out of Minnesota to the West Coast, and skilled manpower was in short supply.

3. The postwar market was about to be flooded with a host of new consumer products including automobiles, appliances, and other electrical-mechanical devices, which we were ill equipped to service and repair. Many occupations were demanding more exacting degrees of skill and greater technical knowledge.

4. The holding power of the secondary schools was considered unsatisfactory, with only 63 percent of those enrolled in grade 5 completing grade 12.

Out of the foregoing conditions came the language of the area school law. "It is the purpose of this section to more nearly equalize the educational opportunities in certain phases of vocational-technical education to persons who are of the age and maturity to profitably pursue training for a specific occupation."

In the years since 1945, considerable progress has been made toward fulfilling the objectives of the law.

1. High school and post-high-school preparatory trade and technical enrollment has increased by over 100 percent.

2. By 1961, high school and post-high-school day enrollment in trade and technical classes outside Minneapolis, St. Paul, and Duluth had increased from 7 percent to more than 50 percent of the total enrollment. Adult evening school trade and technical enrollment increased more than 10 times. Area schools are cooperating with joint apprenticeship committees in providing related instruction for apprentices through all areas of the state where area schools are located. In 1960-61 there were 2,522 trade and industrial apprentices enrolled in vocational schools and 12,428 other tradesmen in extension training. Of these, 3,633 were enrolled in technical extension courses. Industrial advisory committees are assisting in keeping courses and equipment up to date so that employed persons can keep up with their occupations.

3. Cooperative part-time distributive programs have been made available to area students. Two area schools, Thief River Falls and Winona, are staffing post-high-school distributive programs to start in the fall of 1962.

4. Nine of the area schools have developed vocational agriculture programs. They employ a full-time vocational agriculture coordinator who works on an area basis, preparing farm management analyses and instructional materials based on these analyses. One area school has developed a one-year post-high-school training program for boys going into farming that includes a plan for financial assistance in getting started in farming.

5. Six area schools offer one-year post-high-school business training courses designed to enable the office trainees to become vocationally competent. These courses fill a particular need created by the inadequate business education departments of the small high schools.

6. All area schools have extensive evening programs in home economics. They offer a broad range of courses attended by homemakers from as far as 50 miles away.

7. Technical training under the National Defense Education Act of 1958 has been authorized in area vocational-technical schools and more recently in junior colleges. At present there are NDEA Title VIII programs in only the area schools, but two junior colleges have programs under consideration.

Primary efforts in the development of technical education have been exerted in the area schools where sympathetic administration and established liaison with industry already exist. Nearly all of these programs are on the post-high-school level. Two area schools, however, allow high school seniors to start in electronics with the expectation that the students will continue at the post-high-school level.[2]

8. New courses are developed and added where there is occupational demand. This has occurred most recently in industrial electronics and tool design. Other occupational fields currently under analysis in which

[2]It has been the opinion of the writer that high school graduation and a solid mathematics background should be prerequisite.

My recent observations have been that it may actually be easier for a large high school to carry on technical training than trade and industrial training. Space requirements are not significantly greater than those for a chemistry or physics laboratory. Equipment is expensive, but reimbursements under Titles III and VIII of the NDEA have lightened that burden. Technical education has academic respectability, and block scheduling is not mandatory for successful instruction. A large high school may have a sufficient number of qualified students. The nature of the work in electronics is such that a bright student may move at a tremendous pace and not be hindered by the speed of a machine or by the limitations of other classmates.

In brief, a high school that graduates more than 200 students annually probably could, with careful screening, produce 15 bright non-college-bound technicians each year. But the typical high school could not do so. Furthermore, the typical high school is not likely to have personnel qualified to teach industrially oriented courses, to have available the necessary industrial advisory committees, or to be able to provide placement services.

courses are expected to be organized include chemical laboratory technology, instrumentation, reproduction technology, medical laboratory assisting, dental assisting, and data processing.

The previous statements reflect the progress and growth of area vocational-technical schools in Minnesota, but there is a need for more area schools for a number of reasons.

1. Technical, trade, and industrial training is still lacking in comprehensive high schools. In 1960-61 only 4 percent of senior secondary school districts other than area schools offered day preparatory technical or trade training. No junior colleges offered technical or trade training that met the standards of the Minnesota State Plan for reimbursed programs.

2. An increasing number of young people will be graduating or leaving our high schools and seeking employment. In 1962, 38,000 graduated; in 1964, the number will be 43,000; and in 1965, 48,000. And against this outpouring of high school graduates, all indications point to a decreasing demand for the untrained and the unskilled.

3. Reliable sources indicate that most future industrial development in Minnesota is likely to be in the "brain industries" such as electronics, tool design, and data processing. At present the area schools are the only institutions staffed and equipped to train young people for nonprofessional technical jobs.

Area school accomplishments have been achieved with maximum local district participation in survey of needs, planning, financing, and construction of facilities. All construction cost must be borne by the local district, that is, the regular school district. None of the 12 area schools enlarged its district immediately before or after receiving area designation. All equipment costs, except for practical nursing and NDEA technical, are paid by the local community. However, area school districts are assured costs for serving nonresident post-high-school students, which costs include a proportionate share of the cost of debt service on buildings and equipment. We believe that this system has considerable merit, since it relieves the local district of responsibility for educating trainees from other districts, and it also makes it financially expedient for area schools to recruit nonresidents. In 1960-61, $225,000 in differential aid was paid to the area schools; the amount for 1961-62 exceeded $315,000. Since the foundation aid given varies according to the wealth of the district and is based on both high school and post-high-school students, it is not possible to state categorically how much state aid is being given per pupil in all of the area schools. Foundation aid for post-high-school students in 1960-61 was $99,000. Of all vocational aid to area schools, the portion that is federal money varies from 18 to 35 percent.

Since nonresident high school age students may attend an area school only if their local districts give consent and pay their tuition, based on costs, the local district may then collect the foundation aids just as if the students were in local attendance. Most small high school boards will not give this consent since they are anxious to keep their enrollments up. This does not concern the area schools greatly because in most cases they prefer to enroll high school graduates with their added maturity and better scholastic background.

A more serious problem is the high school dropout. If a student drops out in the 10th grade and later seeks to enroll in the area school at the age of 19, for instance, he is still not a high school graduate and must solicit the consent and financing of his local board. This is usually not forthcoming, and the student cannot attend unless he is willing and able to pay his own tuition as an adult. Adults (those over 21) pay tuition based on area school costs, ranging from $30 to $55 per month.

Area schools exercise admittance prerogatives based on the applicant's past school and work record, aptitude and ability tests, and personal interview. Area schools need not accept students who cannot be expected to profit from training in the occupation of their choice. Such students are usually counseled regarding possibilities in other occupations, or they may be enrolled on a probationary basis.

Area schools have been experiencing a decided trend toward post-high-school attendance. In fact, the increase in post-high-school attendance has been at the rate of more than 20 percent a year. The reasons for the increase include the mounting demands of occupations, students' desires to graduate from their "home" high schools, and the fact that the area school law favors nonresident post-high-school attendance. Although high school trade graduates have been placed in trade work regularly by area school directors, especially in certain occupational areas, employers, when given a choice, will nearly always choose the more mature post-high-school trade and industrial graduate. Hence, when high school and post-high-school students are in competition for training stations in the school, as is increasingly the case, the high school student may lose out. When the area schools were primarily high schools, the general education subjects such as social studies were handled by regular secondary school staff. This procedure is still followed for area high school students. But for the most part, general education subjects are not available to post-high-school students. Area schools therefore have been criticized by some educators for being too technical, offering only skill courses, technical courses, related mathematics, related science, and in some cases, related communications, but no humanities.

Area school directors and others have replied that post-high-school students have had 12 years of social studies, history, English, and other humanities — that they should expect to continue such studies formally and informally throughout their entire lives. The area school point of view is that an individual should expect to devote 1 to 2 years of his life to learning the rudi-

ments of an occupation. It is this occupational training that the area schools take as their bailiwick. They contend that the members of the vocational school staff are expert only in occupational training. Convinced that a great deal in the way of desirable attitudes and human relations is absorbed through occupational training, most area school personnel believe that the limitations of time necessitate the elimination of purely academic subjects from the post-high-school curriculum.

All area school administrative, supervisory, and instructional staff members in all of the vocational fields are required to have at least 3 years of noneducational work experience beyond the learner level. For a time, this created a problem in obtaining instructors with degrees, especially in the trade and technical fields. When it came to a choice between adequate experience and a degree, experience was considered the more significant. In the past 2 years, however, we have noted an increasing availability of instructors who have both the degree and the occupational experience. This has come about partly because of an increased awareness of the area vocational programs and also because an increasing number of area school graduates seem to be getting industrial experience, acquiring degrees, and coming back into vocational teaching. We are now in the process of working out a sustained teacher recruitment program to be directed at past area school graduates now in industry.

The Minnesota State Plan provides for the reimbursement of the cost of area vocational counselors. At present only 3 of the 12 schools are utilizing the plan. Most of the other schools depend on the director or coordinator for counseling, or utilize the secondary school counseling services. Area vocational counselor requirements are stringent. They require a regular state counselor's certificate plus credits in the philosophy of vocational education and 2 years of noneducational work experience.

A pilot project is now under way to measure the validity of entry tests being given to electronics and auto mechanics students. If this project appears meaningful, it may lead to an IBM system whereby every student entering an area school will have his test and interview data recorded on an IBM card for later comparison with first-year grades, second-year grades, and followup data. Over a period of time, these data could shed much light on the validity of aptitude and ability testing in the state.

Course content in area schools has been typically worked out by the local instructor in consultation with a local advisory committee. Increasingly, however, we see less justification for curriculum differences between schools, since all recruit from a common student market and place graduates in comparable jobs throughout the state. In technical areas, such as electronics and tool design, curriculum content is determined by a state advisory committee whose members have available course material from other states, in addition to their practical knowledge, as a basis for making content decisions. Perhaps this practice should be followed in many other fields.

Certification requirements for directors include 5 years of experience as a teacher, supervisor, or coordinator in a vocational program with at least 1 year of supervisory experience, 3 years of work experience outside of the educational field, and a bachelor's degree. Most directors have master's degrees. Area school directors have become skilled in the art of public relations and occupy a part of their time in career days, calls on schools, news media contacts, developing brochures, and other promotional activities.

At the state level, the Assistant State Director of Vocational Education is specifically charged with spending 50 percent of his time in the administration, supervision, and promotion of the area vocational-technical schools. His area school activities include:

1. Conducting area directors' conferences, at which policy and philosophy of area schools, in addition to administrative matters, are frequently the discussion topics.
2. Reviewing the area school requests for foundation and differential aids and making recommendations to the State Director therefor.
3. Coordinating the efforts of the other supervisory staff in providing consultative services to the area schools.
4. Providing consultative services to area school directors and superintendents on matters of new programs, advisory committees, finances, legal matters, and promotional efforts.
5. Providing consultative service to communities seeking designation as area vocational-technical schools.
6. Serving as area school consultant to various state advisory committees on youth.
7. Speaking for the area schools at state level meetings, such as the state welfare conference, superintendents' meetings, and counselors' gatherings.
8. Providing leadership for the continuing improvement of selection procedures, instruction, teacher recruitment, and job placement.
9. Keeping local directors continually informed about new developments and opportunities for vocational education at the state and national level.
10. Making recommendations to the State Director regarding requests to the State Legislature.

Regular supervisors in the various vocational fields also supervise courses in their service unit in the area schools. In fact, a large majority of the trade and industrial programs in the state are in area schools. The same is true of adult home economics programs.

Area schools are well qualified to handle the kinds of specialized training required under the Manpower Development and Training Act. They have well-established lines of communication with industry and are experienced in working with industry. Area schools also

have experience in giving occupational training to youth and adults of all ages with widely varying educational and experience backgrounds.

Some Problems

Discussion of the area schools would not be complete without including something about their shortcomings. In about 5 years, the area schools, which were primarily high schools, have become mainly post-high-school institutions. This rapid transition has created some problems in dealing with post-high-school students. Some of these problems are:

Housing. It was originally thought that most students would be commuting students, and that the area schools would not be involved with student housing. However, many students come from considerable distance and must find housing in the area school city. These students are being housed in private homes — a situation which most communities involved have found desirable because of the economic benefits to local home owners. Availability of rooms has not been a problem and, to date, no serious supervisory problems have arisen. The necessary prechecking of student residences, making house rules and regulations, and checking the rent to be charged are all questions presently being resolved more or less individually by the schools involved. Differences among the schools in the amount of responsibility accepted for supervision of student living quarters has been a subject of some concern to parents and counselors. Area school directors who advocate minimum supervision point out that most of these post-high-school students would be living away from home on their own in any case if not at the area school. The housing topic is discussed frequently at area school directors' meetings, and it is likely that more uniform policies will be forthcoming in the next few years.

Student social life. During the past several years, the courses offered in area schools have become more technical, and the schools' reputation for quality training is becoming widespread. The result has been the attraction to the schools of high-ability students who appreciate and desire social experiences in school in addition to training activities. Area school directors have sensed the need and have been adding such activities as school dances, athletic teams, and student councils. However, these efforts would be regarded as somewhat amateur by collegiate institutions that have been carrying on such activities for many years. Furthermore, the director does not have unlimited time, and it is difficult for him to delegate social assignments to teachers whose ability and willingness to handle student social affairs were not considered when they were employed.

Limited concept of vocational education. The vocational leadership function in area schools is just as important as are similar functions in other educational institutions. The fact that an area director is a qualified vocational educator does not always assure a broad concept of vocational education. Some of the area school programs have been limited too much to traditional trade courses. It is not easy to be critical of such programs, particularly when a superior job of training is being done, but efforts are being made through state leadership to broaden the area school program.

Lack of trained guidance personnel. Only 4 of the 12 area schools employ specialists in counseling. In the other schools, selection and counseling are carried on by the directors or coordinators. Time commitments often do not permit the area directors to spend adequate time in counseling. In most cases they have not had a great deal of professional course work in counseling. However, experience with the needs of industry and with students has given them considerable insight into screening students for the various courses.

The lack of counseling personnel in outstate schools has been partially compensated for by extensive cooperation with local offices of the Department of Employment Security. In five of the area schools all entering students are tested by Employment Security and are registered with it for placement upon completion of training. However, the schools do not abdicate their placement responsibility; the Employment Security help is regarded only as an added service. In most instances, Employment Security has been of considerable help to the area schools, providing perhaps the equivalent of a half-time counselor. Some difficulties have developed, however, in that the *state* office of Employment Security objects to the local offices' practice of giving the student test scores to the area schools. Where local offices test and interview, but do not give out test scores, the school directors are likely to abstain gradually from making referrals.

In summary, the area schools of Minnesota are providing high school and post-high-school vocational training needed by students, industry, and government. Although all existing facilities and operational procedures are not perfect and some areas of the state are still too distant from area schools, substantial improvement in facility expansion, curriculum progress, and operational procedures is currently being made.

These schools are meeting a training need that was not being fulfilled at the time the area school law was passed and that no other educational institution in the state is now prepared to meet. There is no evidence that area school graduates are less competent citizens because their school training has stressed occupational learning.

The Junior College

The general aims of Minnesota junior colleges, as stated in "The Junior College in Minnesota," are preparation for advanced study, vocational education, general education, and community service.

Recent evidence indicates that the junior colleges of Minnesota are doing a satisfactory job of providing transfer courses for four-year degree programs. Students completing the transfer courses tend to do as well as or

better than those who take all of their collegiate work in the degree-granting institution. But the junior colleges have not been significantly involved in post-high-school vocational-technical training. Some of the reasons are historic.

The junior college movement in Minnesota was started in 1914. But state building money has never been provided, and it was not until 1957 that any state support for maintenance of junior college students was voted by the Legislature.

Typical picture. Junior colleges have been limited to the larger, wealthier school districts, or to districts obtaining a large portion of their income from nonresidential properties, as is the case on the Iron Range. State law provides that school districts may combine to form a larger junior college district. But in no instance have communities or districts made any serious attempt to take advantage of the law and form a large junior college district. One important reason for this is that there is an economic advantage to the community in having the college located in its midst. Because of this advantage, the adjoining communities have been unwilling to tax themselves for the support of the college.

Junior colleges have typically started by "finding" space in an existing high school or elementary building "pending" the time when building funds would be available. Of the 11 junior colleges in existence in Minnesota, not one has been built on a campus separate from the high school and with collegiate-type facilities. The space "available" did not ordinarily include trade and industrial facilities.

Just as the physical facilities have been limited, so also the staff has been limited. Usually the first dean has been selected from the high school academic teaching staff, and initially has taught college subjects while serving as part-time dean. The dean often has had little training in general school administration and no training in vocational education or its concepts. His responsibilities have been similar to those of the high school principal, and have not included broad financial, construction, and program planning for the junior college. Although most of the junior colleges now have full-time deans, local boards often have not provided them with the administrative and counseling assistance required to keep pace with the growth in the pretransfer enrollments. This has made it difficult for the deans to devote the time needed for the development of new vocational-technical programs.

A lack of understanding by the deans of the needs of vocational education, especially in the trade and technical fields, has been a handicap to the vocational programs. Where attempts have been made to establish trade or technical programs, the programs have often been based on the availability of facilities, staff, and existing courses, rather than on the needs of the occupation. The occasional contacts with industry have been cursory rather than analytical in nature.

Objectives of the nontransfer courses have usually centered around providing "something for the transfer dropout" rather than around the needs of the occupation for which the training is proposed. In one technical aid program, the transfer dropouts who started the vocational courses generally dropped out of the entire program. Only a few ever completed the program. Some of the factors involved were: (1) No selectivity was exercised other than that this was a program for those who failed in preengineering. (2) Students who had engineering capability but who preferred the technical aid course were "pushed" to transfer into the preengineering program. (3) At the beginning of the program several unrelated industries were consulted, and the decision was made to train a general technician. The student, therefore, was given courses in surveying, electricity, forging, welding, woodworking, machine shop, and sheet metal, as well as courses in mathematics and liberal arts. The net result was that the student did not get enough training to be qualified in any one area, and he was not readily employable on the basis of his training. (4) Little effort was expended on placement, and no placement records were kept.

At present, none of the junior colleges offer trade and industrial or technical programs that meet the standards of the State Plan for Vocational Education. They do offer, however, some quasi-vocational programs for which they receive the state junior college student aids. These aids consist of $300 per pupil annually. This puts the State Department of Education in the curious position of providing funds for the support of substandard vocational programs which cannot be supported with regular vocational aids because they do not meet state vocational standards.

If a junior college is to qualify for student aids for a "vocational" program, its teachers must meet the academic requirements of the transfer program, including at least a master's degree. It is very difficult for the junior college to secure instructors who have trade and technical competence in addition to the degree.

Successful programs. The vocational training areas in which junior colleges have achieved some degree of success are office and distributive training. The office training programs lend themselves nicely to the junior college pattern of operation. Single-period classes are acceptable; degreed teachers are available. Office education trains for white-collar employment, which provides status for the students. Many students in the office program adapt very well to taking regular transfer courses as the general education part of their training.

On the other hand, a considerable number of students do not adapt well to the transfer classes, and some who could perform quite capably in office skills drop out because they are unwilling or unable to complete all of the collegiate requirements. An analysis of the office curriculum shows that the amount of actual practical skill and related training given in 2 years in the junior

college is comparable to the amount of practical work given in 1 year in the area of vocational-technical school or in the private business school. Furthermore, in some of the junior colleges, a majority of the two-year office-training students leave to seek employment after the first year, having acquired only one-half of the skill and related training that a typical area school or private business school student would have had.

Office-training equipment in the junior colleges has generally been as good as that found in the larger comprehensive high schools. In two of the junior colleges a regular cooperative part-time office training program is being carried on successfully. For other than the cooperative program, placement data are not available: but placement is quite good, since the demand for office workers is high at nearly all advanced levels of training.

Distributive education programs in 2 of the 11 junior colleges have also been successful in terms of the success of graduates and the general reputation of the programs. In both instances the programs were organized and carried on by competent, well-trained vocational distributive coordinators.

Fairly extensive vocational evening trade extension programs are conducted in three junior college districts. Each of these districts has a qualified vocational coordinator. In two of the districts the coordinator reports directly to the superintendent with no responsibility to the dean of the junior college; in the other, the vocational coordinator reports to the dean.

Progress. There is in Minnesota a strong junior college "movement," comprised largely of educators, but with some lay support. It is the contention of this group that junior colleges should provide the bulk of the 13th and 14th years of education in Minnesota in the general categories listed previously as junior college aims.

The supporters of the movement have not looked with favor on the development of area vocational-technical schools in the state. It has been their contention that the scope of the area school training is too narrow since it limits the student to occupational training and does not make it possible for him to switch readily to the college transfer program without loss of credit or time. Furthermore, it is contended that adequate general education is not available in the area school. They believe that most of the area schools should be merged into the junior college pattern, thus making the area schools more comprehensive institutions. At the same time, they maintain that existing junior colleges should become more vocational, and thus more comprehensive, by offering more occupational training courses. Local junior colleges and area schools have been under some pressure for a number of years to work toward the implementation of this objective of increased comprehensiveness. No attempt will be made here to analyze the wisdom of this objective. If it is assumed for the moment that comprehensiveness is a desirable objective, the following actions represent "progress" toward that objective.

1. In July 1962, the administrative regulations of the State Department of Education were amended to provide for a vocational coordinator in junior colleges offering three or more vocational programs. The philosophy behind the amendment is that experience has demonstrated rather clearly that vocational programs can be successful only if they are under the direct supervision of a qualified vocational educator.

2. In Austin, the only school district in the state presently having both a junior college and an area school, the junior college started an engineering assistant training program in the fall of 1961 which utilizes the area school electronics and machine shop facilities during late afternoons. This training program, however, does not meet the standards of the state plan, and the curriculum structure is not highly regarded by the Vocational Section of the Department of Education. But it does represent an effort on the part of a junior college to add comprehensiveness to its program.

3. The Hibbing Junior College has initiated plans for offering industrial and other vocational programs. It has hired a qualified man in an instructional capacity with the idea of using him later as a coordinator. The dean has been consulting frequently with the State Vocational Section and the Department of Employment Security regarding "demand" occupations. He has set up several meetings with industry and other groups to determine course content with intent to plan courses based on occupational needs. The dean's previous experience as a mathematics teacher in a vocational-technical school is helpful in enabling him to understand the needs of a vocational program.

The Hibbing School Board is concurrently considering the establishment of an area school instead of placing the vocational programs in the junior college structure; hence, it is not yet fully determined that the Hibbing vocational program will "enhance" the junior college movement.

4. The first modern community college in Minnesota has just been organized at Willmar. The superintendent of schools has exerted major leadership in the development of the college and will serve as its president. He was formerly a high school principal and is presently completing doctoral work at Columbia University. Since Minnesota does not have a community college law, the Willmar Community College is being organized as an area vocational-technical school and a junior college. To the general public and attending students, however, it will be known as a community college. The college is located on a campus site 3 miles outside of the city of Willmar (population 10,400), which site was formerly an Air Force Radar Base. Air Force buildings were adapted for five vocational areas, and classes started with a full enrollment in the fall of 1961. College transfer courses will be added shortly.

Application and registration procedures will be the same for both vocational and transfer students. Both will

be on a quarter basis. Transfer students will pay tuition and fees based on junior college law. Vocational students will pay fees based only on area school law. Both groups will participate jointly in athletic and other college activities. Vocational students must take all of their prescribed course work in the classes designed for their occupational training. However, it is planned that they may take additional college work on a late afternoon basis if they so desire. Transfer students may make some late afternoon utilization of vocational facilities if scheduling can be worked out.

The academic dean and the vocational director will report to the president of the college. It is anticipated that at some time in the future, growth of the college will require a full-time president.

Although the experiment might be more meaningful if better buildings were available, the Willmar Community College is the first full-fledged attempt in Minnesota to combine an academic transfer program with a vocational-technical program, and it will be watched with great interest.

The four illustrations just given represent "progress" toward the assumed desirable objective of making junior colleges more comprehensive by adding vocational-technical courses and by gradually merging area vocational programs into collegiate-type institutions. Considering that this has been an objective of the junior college movement for the past 30 years, the progress seems quite minute. If junior college or community college vocational-technical programs are ever to be a significant factor in Minnesota education, several axioms, in the opinion of the writer, must be recognized.

1. The vocational-technical programs must be organized and supervised by a person who has had vocational-technical education training and experience. We have no record of any vocational-technical program being successful without that ingredient. If the supervisor is qualified and competent, matters of instructional staff, instructional equipment, curriculum, facilities, and other standards fall into place somewhat more readily.

2. The head college administrator must be broadly trained in general educational administration and have an understanding of vocational education gained from experience or course work. This is necessary so that he will understand and support vocational program budget, staff, and curriculum requests. One of the understandings that must come to college administrators is that the flexibility of vocational-technical programs has limitations. The last-quarter dentistry student cannot expect to transfer all of his credits toward a physician's degree. By the same token it is impossible for the technical electronics student to expect to transfer all of his course work to electrical engineering. Vocational-technical courses must continue to be based on occupational needs.

3. Although individual students may profit from extra courses on an extended day basis, there cannot be any wholesale mixing of vocational and transfer students in the same classes intended to serve objectives of both groups. Such classes soon lose their purpose.

4. Vocational-technical courses in a college must stand on occupational training and cannot exist for the primary purpose of accommodating the transfer dropout. Such dropouts must qualify through regular selection procedures, or the program will rapidly become a reputed "dumping ground" with a corresponding drop in enrollment, in the quality of enrollment, and in employment demand.

5. Full-time state direction within the State Department of Education is needed. This has been requested from the Legislature several times. The request will be repeated, and probably eventually will be granted. If the junior college "movement" wishes to continue to place emphasis on comprehensiveness through broadening of vocational programs, the specifications for this job will be important. If the state junior college director should be an academician, he is likely to place emphasis on the development of academic excellence with continued curtailment of vocational-technical programs. On the other hand, if he should be a person with broad administrative training and experience and with vocational understanding, he might energize the vocational-technical program in the junior colleges.

6. Provision of state or federal money for building and equipment would be one specific step toward which the junior college state director would work. Unless such money is forthcoming, it is unlikely that many of the present junior college districts will provide significantly for formal or other vocational education courses; it is unlikely that they will go deeply into debt to provide vocational junior college facilities for "area" students. We have noted that towns have been reluctant to tax themselves to build a junior college in a neighboring town, often a commercial competitor. Federal aid or new state tax sources, such as a sales tax, would seem necessary.

7. If it is desirable that area vocational schools and junior college programs be merged, it could more readily be accomplished under a new name such as "area community college." As it relates to vocational-technical training, the name "junior college" has acquired an unfavorable connotation with some educators and others in the state. The record of area schools has found favor with many lay persons, joint apprenticeship committees, labor groups, and legislators, and it is unlikely that area vocational-technical schools could ever be forced to yield their name, with its reputation for quality training, to the junior colleges. The union, if it is to occur, would have to come under a new institutional title.

The State Colleges

The five state colleges started as state normal schools — teacher-preparing institutions. Subsequently they became four-year, degree-granting institutions and now offer a master's degree program in subject areas and

guidance. They serve as junior colleges for their areas, offering preprofessional and liberal arts courses that may be transferred to the University of Minnesota without loss of credit. State college participation in some phases of vocational education now appears imminent. Each of the colleges has the capacity to supply all of the replacement needs of the state for industrial arts teachers. This situation has caused state college presidents and industrial arts department heads to give thought to other outlets for their graduates. Some are planning four-year industrial technology programs leading to a B.S. degree. Others are considering two-year technical programs. Such an expansion would result in an unfortunate duplication of programs in those cities where there are both state colleges and area schools. The potential duplication of programs is of great concern to the Vocational Education Section of the Department of Education, but it does not have the jurisdictional authority or the advisory capacity to do anything about it.

The University of Minnesota

The University of Minnesota has branches at Duluth and Morris. The University is involved in vocational education through its Schools of Agriculture and through its General Extension Evening Class Program. The Schools of Agriculture are remnants of a need identified many years ago for agricultural training at the secondary level on a less-than-full-year basis. The schools were established for farm boys who attended 6 months during the winter — leaving them free for summer work — to learn the "basics" of agriculture. Since that time 300 approved vocational agriculture departments have been established in public school systems throughout the state. Most rural youth now prefer to attend regular high schools on a full-year basis. Credits in the Schools of Agriculture have somewhat limited acceptance since they do not represent a full school year of attendance. The attendance at these schools has been diminishing, and it appears that this program will be phased out. Utilization of these facilities by the University is still undetermined.

Through its General Extension Evening Program, the University offers nondegree certificate courses in a variety of fields such as interior design, public administration, secretarial services, industrial relations, business administration, accounting, engineering science, and all kinds of engineering. Although these courses are "college-level," and the vocational evening school courses in Minneapolis and St. Paul are not recognized as such, many of the same faculty are utilized, often teaching much the same content in both institutions. The vocational schools have the advantage of greater flexibility, closer contact with industry through advisory committees, frequently better instructional equipment, and lower fees. The University has the advantages of prestige, college credit, and a certification program. Furthermore, the credits are acceptable if the individual later decides to try for a degree.

Retraining the Unemployed

Minnesota had some experience in retraining unemployed workers prior to the enactment of the Manpower Act. Although the Area Redevelopment Act was passed in May of 1961, funds were not provided until early in 1962. In order to start training earlier, the Minnesota "Governor's Plan for Retraining" was conceived. Under this plan the unemployed received 16 weeks of free training with tuition paid by the Iron Range Resources Commission. Those who were drawing unemployment compensation were allowed to continue to do so as long as they were not called back to work. The principal stumbling blocks were: (1) many workers had exhausted their unemployment compensation and could not afford to be in training; and (2) there was no area vocational-technical school or other good training facility in the Iron Range area, Minnesota's "distressed area." Consequently, training was conducted in area schools away from the "Range," and trainees had to move for training. As a result, only 22 persons were actually enrolled in electronics, baking, machine operation, and auto tuneup. A followup revealed that the sixteen-week period was not adequate for most persons in the occupations for which training was offered. Decisions regarding the areas in which training was given were made by the State Employment Security Research Department.

Following this state program, training under the Area Redevelopment Act began in February of 1962 at Duluth, Eveleth, and Virginia on the Iron Range. Based on earlier experience involving the moving of trainees, a new center was established at Eveleth, and an existing program at Virginia was upgraded. About 100 persons are presently training in electronics, welding, diesel mechanics, and cooking. They were selected from about 400 who requested the training, so that their quality has been high. Many have had some experience in the occupation for which they are being trained. The welding trainees, the only group far enough along for placement, have experienced no difficulty in getting jobs.

Rules and regulations for training under the Manpower Act are presently being written. It is anticipated that most training will be conducted under the auspices of existing or newly organized area vocational-technical schools. A primary objective in Minnesota will be to spend the Manpower Act money on facilities that will be available for training and retraining under regular vocational administrative structures after federal reimbursement has ended.

Teacher Training

Teacher-training institutions in all of the vocational fields must receive the approval of the Vocational Section of the State Department of Education. Home economics,

office, and guidance services have given approval to several teacher-training institutions; but agriculture, distributive, and trade and industrial services limit teacher training to the University of Minnesota.

Except for trade and industry, nearly all of the teacher training takes place on campus. It is the considered opinion of trade and industry supervisors that the off-campus instruction is the most effective means for upgrading trade instructors and giving new instructors preservice training, and reimbursement policies are established accordingly.

Private Vocational Schools

Dunwoody Industrial Institute in Minneapolis, a nonprofit, endowed institution which enjoys an international reputation as a high-quality training center for men, is the most significant private vocational school in the state. Annual enrollment at Dunwoody is usually about 1,600 day students, with an additional 2,400 in evening classes. Instruction at Dunwoody is considered free: the $34 charged per four-week period is for nonteaching expenses; the actual instructional costs are covered by endowment income. Dunwoody directors and personnel have been active in the state vocational organization and have supported public vocational education. The present director of Dunwoody is a member of the State Board of Education.

Minnesota has a substantial number of private trade schools, especially in the Twin City area. The state has a private trade school law of somewhat limited effectiveness. These schools advertise heavily out of state, and most draw a majority of their students from out of state.

State Vocational Association

The Minnesota Vocational Association has been a mainstay for the vocational teachers in the state in providing meaningful state conventions, a good professional publication, and opportunities to carry on necessary public relations and legislative efforts for vocational education.

Conclusions

Some appraisals of institutions and of specific programs of vocational education have already been included in the general content of this report. A brief review of the total program is difficult because standards of measurement for a total state program are not firmly established. However, an attempt will be made to evaluate the total program on the basis of (1) meeting the training needs of the people of the state; (2) meeting the training needs of agriculture, commerce, and industry in the state; and (3) efficiency of operation.

Meeting the Needs of the People

Through the high school, area vocational, junior college, and university programs described, vocational training is available to most young people in the state, especially the age group 16-21. There are some geographic limitations, which additional schools would partially rectify. However, we are being forced to the conclusion that it is not economically feasible to have a comprehensive vocational program within commuting distance of every potential student in the state. Because of the high cost of facilities and instructional equipment, at some point it becomes more economical to pay the board and room of students at established institutions than to construct and operate a school.

We have two principal shortcomings. First, we have not been entirely successful in getting adequate information to the students about occupations and available training. Second, our offerings at the extremities of vocational education are lacking in breadth. It is the opinion of this writer that we need a greater variety of course offerings at the technical level. This opinion is supported by the Employment Security Research Department. We are lacking also in variety of course offerings for low-ability students. As vocational-technical programs have become more technical and more post-high-school, we have been shutting out more and more of the lower ability students — those who are becoming a state and national problem. Vocational education has not really begun to tackle this situation in Minnesota.

There has been available a considerable variety of adult vocational training programs at low cost to the participants. But keeping the adult public aware of vocational training opportunities has been one of the weakest facets of the programs. Another need is the organization of some of the individual courses into more meaningful, sequential certificate courses.

Meeting the Needs of Agriculture, Commerce, and Industry

As previously indicated, agricultural education, through the University, high schools, and area schools, has been extensively provided. The prominence of our state as a top producer of meat and crops and its reputation as a leader in farm management instruction give some evidence of the success of the program.

Although we have adequate numbers of office training departments, lack of state leadership has hindered their quality and contributed to their failure to be used to capacity. We have a continuing shortage of trained office workers in our state. One program that was offered in an area vocational school for training women over 45 in office skills has been successful, and we may consider other such adult programs. Distributive training is far from realizing its potential in the state, but recent meetings with trade associations, such as furniture dealers and wholesale furniture salesmen, indicate an increasing understanding and appreciation of the potential of distributive education.

Minnesota's industry is heavily oriented to the technical and highly skilled (i.e., Univac, Honeywell, Minnesota Mining), but there is no critical shortage of workers

for these industries. In fact, we are constantly subject to recruitment from the West Coast and other industrial centers for our technically trained people. This is a credit to the day and evening technical and trade programs. The principal weakness is the failure to offer training in certain important skills for which the demand is small.

Efficiency of Operation

As indicated in this report, the University Regents, the State College Board, and the State Board of Education all administer some phases of vocational education. Within the Board of Education and within the Department of Education there are differences of opinion as to whether vocational education can be developed in the junior colleges or whether it should continue to be offered primarily in the area schools. There is continuing pressure for the junior colleges to offer more vocational training, although, for the most part, they do not have the facilities, equipment, or staff to carry on the program.

Under these circumstances, it is virtually impossible for vocational education to be organizationally efficient. To what extent it is financially efficient is exceedingly difficult to determine, but it seems reasonable to expect that it could be more efficient if there were an overall guiding agency for vocational education in the state.

XVI. Report on the System of Vocational Education in Ohio

By Byrl R. Shoemaker[1]

Basic Principles Underlying the Program

In discussing the vocational education program in Ohio, we are concerned with the total program of vocational education involving agriculture, home economics, distributive education, business education, and trade and industrial education. Vocational education leadership believes in developing the best possible program within each of these areas of vocational education rather than trying to develop one general vocational education program for all areas as though they were one.

Each area of vocational education contributes to the basic or general values of education. Each area, however, has a unique contribution to make in the preparation of people for the world of work and/or worthy home membership. Leadership in vocational education is interested in discovering ways in which the various services can cooperate to provide better services to young people, without minimizing the unique contribution that each of the areas can make to the total educational program.

Those of us in public vocational education are aware of the various groups that are working in the field. Industry, private schools, business, parochial schools, and other groups all make a great contribution to the total vocational education effort. We believe, however, that the public education agencies have a continuing responsibility in the vocational education field. Industries and businesses cannot own people. They will be hesitant, therefore, to invest large amounts of money in the training of youth and adults for basic vocational education, particularly as competition increases within the various areas of our industrial economy. As companies become involved in greater competition, they tend to ask public education agencies to accept a greater responsibility for the basic vocational training of youth and adults.

Technical education, designed to prepare persons as assistants to professionals, is offered only on the post-high-school level. The leadership in vocational education believes that all other vocational courses should be offered at both the high school and the post-high-school level. It believes that such programs should be strengthened and improved, and that additional services should be extended to many young people not now being served.

Local educational leadership has supported a strong state leadership in the area of vocational education with close coordination of the various service areas under the State Director of Vocational Education. It is our belief that all functions of supervision, teacher education, and special services within the various areas of vocational education must be coordinated by the state supervisor of each service. Policies of the Division of Vocational Education encourage persons involved in the above-listed services to view themselves as a part of the team, regardless of the location of their place of employment.

The location of personnel of the various vocational services is decentralized through contracts with university centers. All teacher education personnel, as well as most of the specialized service personnel (such as coordinators in Fire Service Training and Industrial Leadership Training), are located in such centers. In a few cases, supervisory personnel serving areas of the state also are attached to university centers for purposes of providing better services to such sections of the state. The contracts with the universities state clearly the responsibilities to be assigned to each individual, the amount of reimbursement that will be made to the university center, and the fact that all work of the individuals will be under the general direction of the state supervisor of the special service, in accordance with the provisions of the Ohio State Plan for Vocational Education.

To date, there has been no conflict of interest between the universities in which personnel have been located and the leadership in the State Department of Education. The relationship between the State Department of Education and the universities has been such as to strengthen the efforts of both groups, to the benefit of the vocational education program.

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The various vocational education services have prepared written manuals of operation at the state level in order to provide uniformity throughout the state and to enable local programs to have available the written rules and regulations that must be followed in order to establish sound programs at the local level.

Our experience has indicated that state personnel must be selected on the basis of capabilities and experience obtained from leadership of successful programs in the local communities, rather than on the basis of providing state personnel experience that will enable them to return to local community jobs as soon as they have gained acceptance and recognition.

Each of the programs of vocational education in Ohio is so organized that graduates from vocational programs are eligible to enter state universities, since they graduate from high school with first-grade diplomas. The vocational programs, however, are planned to prepare persons for entrance into certain areas of work upon graduation, and students enrolled in such programs will miss some subjects that are normally part of a college preparatory program.

As new areas of vocational education services have been encouraged by the state and federal governments through legislation and finance, such services have been assigned to the established vocational service groups rather than to new vocational groups created for them. This practice has been followed for such areas as the Practical Nurse Education Act, establishing George-Barden Title II funds; the National Defense Education Act, establishing the George-Barden Title III funds; the Ohio Worker Training Act, providing funds for retraining programs; and the national Manpower Development and Training Act of 1962.

Each vocational service at the state level is encouraged to make good use of *advisory committees* for its total vocational program and for special services within the program. As an illustration, the Trade and Industrial Education Service has the following active advisory committees: Fire Service Training; Rural Electrification Lineman Training; Law Enforcement Training; Custodial Training; and Practical Nurse Training. The local communities also are encouraged to use advisory committees to assist them with program organization and operation.

Financing

Prior to the establishment of the present state foundation program to provide state financial aid to local communities, the Division of Vocational Education reimbursed a percentage of the cost of the instructors' salaries for approved vocational programs. Because of the growth of vocational programs and the increase in salaries, the percentage of reimbursement for instructional salaries declined under this system to about 25 percent. The present state foundation program, established in 1957, makes provision for assistance for vocational programs in addition to the amount the school district would receive if it did not offer any vocational education. This is accomplished as follows. The foundation units allowed under the state foundation program for the vocational classes are in addition to the units allowed the school on the basis of student enrollment, administrators, and special service personnel. Each of the vocational services has criteria for approving the additional vocational units requested by the local communities. The amount of state funds allotted to a local community on the basis of the additional vocational unit will vary between $2,150 and about $6,000 depending upon the wealth of the district per pupil served. Federal vocational funds are used at the high school level to assist only the several school districts in the state that cannot qualify for assistance from the additional vocational unit allowed under the state foundation program.

The state foundation program provides for expansion of vocational education in accordance with the needs of students and communities without the limiting factor of a set amount of money voted for vocational education. A total of $325,000 of state money still is appropriated to the Division of Vocational Education to match, in part, federal funds used to assist with the costs of teacher education, state supervision, and service to out-of-school youth and adults. An additional $200,000 of state money is appropriated as matching money for the federal George-Barden Title III funds, which funds are used for the development of the post-high-school technical education programs.

Federal vocational education funds are used to reimburse schools for supervision of instructional programs at both the high school and adult levels. Adult extension classes in the various vocational areas are reimbursed on an hourly rate, which varies from area to area. In vocational agriculture the total cost of instruction for adults is covered through the vocational education funds. In trade and industrial education, the reimbursement is made at the rate of $2 to $2.50 per hour, with the local community or individuals absorbing the additional cost. No assistance is provided from the state or vocational education funds for such items as equipment, supplies, rent, and janitorial services for programs conducted within the local communities, except for practical nurse training. Practical nurse training programs for adults receive assistance from federal funds voted for practical nursing to help with the cost of instruction, equipment, and coordination.

Post-high-school technical education classes receive assistance from federal vocational education funds made available through Title VIII of the National Defense Education Act (Title III of the George-Barden Act) and matching state funds. Financial assistance is provided to two-year post-high-school technical programs on the basis of two-thirds of the cost of instruction, two-thirds of the cost of supervision, and half to two-thirds of the cost of equipment for such programs.

General Organization of Programs in Local Communities

Ohio has a large number of small school districts within the state, a condition that has handicapped the development of adequate programs of vocational education. There is not an adequate program of vocational education to serve all the youth of Ohio who desire and need vocational instruction. On the basis of the national average for the 1960-61 school year, Ohio should have 20.3 percent of its high school students enrolled in vocational programs. Only 8.9 percent of the high school students in Ohio are so enrolled.

A series of 59 community surveys, conducted by the Division of Vocational Education in cooperation with local communities, included as a part of the survey the administration of a "Vocational Planning Questionnaire" to students. This questionnaire was administered to 31,638 students in 113 schools. The results indicated that 20,985, or 66.3 percent of the students, were interested in enrolling in vocational education programs.

More definitive information on student interest can be gained from the surveys conducted during this school year 1961-62. Sixteen surveys were conducted, involving 69 schools and 18,179 students. The results indicated the following:

46.1 percent were interested in preparation for a vocation and *did not* have plans to go to college;

22.6 percent planned to go to college but also wanted some vocational preparation while in high school;

22.1 percent planned to go to college and did not want any vocational education in high school; and

8.6 percent were undecided about their future vocations or educational plans.

Students are interested in preparing for a vocation while in high school. Administrators seem to be in favor of the expansion of vocational education services to high school youth. The school district organization in Ohio seems to be the biggest drawback to the expansion of vocational education.

Trade and industrial education, business education, and cooperative office practice programs are available generally in the large cities, with adequate programs of trade and industrial education available only in the largest cities. Training in agriculture is found generally in the rural areas of the state, but it is denied to many rural youth who may live only 10 miles from an adequate program. Few city youth have any opportunity to enroll in vocational agriculture. Home economics (vocational or general) is available in all schools. Many general home economics programs, however, do not provide for the breadth of offerings desirable for an adequate home and family living program, as encouraged by vocational home economics leadership.

Experiments made several years ago with a cooperative-type program, enrolling students for trade and industrial, distributive, and business occupations within the same class under the same teacher, proved that the coordinators tended to place students in the business or sales occupations rather than in trade and industrial occupations, since jobs in the latter were the most difficult to obtain. In this same type of program, emphasis tended to be placed upon the business or distributive education phases, depending upon the orientation of the coordinator. Following these experiments, the programs were separated, and no program is approved which mixes the three goals in terms of student employment. Diversified cooperative programs for trade and industrial education placement alone have continued to grow.

Seven years ago the leadership in the Division of Vocational Education recognized that the ever-increasing number of students enrolling in the high schools would require an expanded building program. It was anticipated that the building program would cause local boards of education to ask for help in determining the areas of vocational education, if any, which should be provided for in building programs. To meet such requests, the Trade and Industrial Education Service devised a procedure for conducting a survey in local communities to determine the need for trade and industrial programs or a revision or expansion of existing programs. The survey procedure involved a study of student interest by means of a vocational planning questionnaire developed and administered under the direction of the Guidance Testing Services within the State Department, a gathering of statistical data from selected employers relating to the limited number of occupational areas included in the survey, and the gathering of opinions and reactions from the representatives of these businesses and industries regarding the areas of vocational education needed at both the high school and the adult level.

About 8 to 10 surveys per year have been conducted, and in the past several years, these surveys have been extended to include all areas of vocational education as well as trade and industrial education. Five countywide surveys were scheduled in the spring of 1962 involving all of the areas of vocational education. Briefly, the steps involved in a survey are as follows:

1. Orientation and planning meeting between the representatives of the Division of Vocational Education and the administrators of the school or schools involved in the survey.

2. Orientation of the students in those grades selected for the administration of the vocational planning questionnaire.

3. Selection of representatives of business and industry to be included in the survey.

4. Administration of the vocational planning questionnaire.

5. Letters to the persons selected inviting them to participate in a survey dinner. A form is included in the letter asking for statistical information on employment.

6. Survey dinner meeting with the following activities:

a. A report is made to the total group concerning results of the vocational planning questionnaire.

b. The total group is divided into groups of special interests (agriculture, home economics, business, distributive, and trade and industrial education).

c. In each of the group meetings, the purpose and organization of the vocational program are described, and opinions and recommendations of the representatives are requested.

7. A written report to school administrators, including recommendations, prepared by the survey personnel from the Division of Vocational Education, State Department of Education.

It has become obvious to the leadership in vocational education that the only possible means of providing the youth who live outside the large city areas with an adequate program of vocational education is through the establishment of area vocational schools. Four years ago we were able to assist Pike County in establishing the first countywide area vocational school center. The task was accomplished through the cooperative efforts of the many persons responsible for the operation of educational programs within the county.

At the time the Pike County Area school was organized, there was no provision for state assistance for the development of area schools. One school district, however, was able to provide the building and equipment. Others agreed to participate on a service charge basis, since the students remained members of their local school districts. Formerly, there had been no trade and industrial programs in the county, and only a part of the students had had access to vocational agriculture. Now all students in the county have an opportunity to enroll in vocational agriculture and/or in one of three trade areas: machine trade, electrical trade, or cosmetology. This program, including the transportation of students to the vocational center, has operated successfully. Trade and industrial education students remain at the vocational center all day and take their required academic courses at the center. Agriculture students attend the vocational school for two periods each day and return to their home high schools for their academic courses. Students go to their local schools in the morning on the regular bus routes and are then transported to the vocational center. They participate in athletics and other curricular activities at the home high school, and graduate from the home high school. A program similar to this will be initiated in Licking County next fall to serve the entire county, with the exception of the one sizable city within that county.

The obvious success of this very limited effort towards area vocational schools brought about the revision of the state law, House Bill 620, which makes it possible for two or more districts within a county to join together to establish a joint vocational school, to be administered by the county board of education. Five countywide surveys of the type mentioned earlier are scheduled in order to provide the counties with information that will help them determine what areas of vocational education should be offered if and when they organize vocational education programs under the provisions of the act. We believe that this act provides a great opportunity for the extension of services of qualified programs of vocational education to youth and adults in rural and suburban areas of our state.

Prior to the passage of the NDEA Act of 1958, those of us in vocational education in Ohio, with the assistance of the Trade and Industrial Division in the United States Office of Education, had been studying the possibilities for establishing technical education programs. The term "technical education," as used here, is limited to the type of post-high-school program that trains assistants to professional personnel in occupations dealing with design, development, and testing. Standards developed and approved by the State Board of Education require that 15 percent of the instructional time be spent on basic manipulative skills, 50 percent on special laboratory instruction and technical subjects such as mathematics and science, and 20 percent on communications instruction; the remaining 15 percent of the time may be spent in any way seen fit. Programs are required to run for 2 years with a minimum of 25 hours of class and laboratory attendance per week for 36 weeks per year. These programs operate in cooperation with the public schools under regulations which permit vocational education to be organized and operated as post-high-school preemployment training programs.

The first Ohio program of this type was initiated in Barberton 3 years ago. The first graduating class (1961) was placed without difficulty in positions at the assistant-to-the-professional level. Programs were started two years ago at Salem, Cleveland, and Lorain; in the fall of 1961, at Canton and Mansfield; and in the fall of 1962, at Springfield, Willoughby-Eastlake, Ashtabula, and Hamilton. Each of these technical education centers offers two to three technical programs, except that Willoughby-Eastlake started with four. All of the technical education centers offer mechanical technology, and all but one offer electrical technology. Chemical technology is offered in three schools, and business data processing has been included in two programs started in the fall of 1962.

These technical programs are made possible largely by National Defense Education funds and the matching $200,000 of state funds provided by Ohio.

The state and federal funds are used to assist local communities with the cost of instruction, supervision, and equipment. The local school system sponsoring the program must supply the building and much of the equipment. The students pay a fee ranging from $70 to $100 per quarter. The school districts sponsoring the

programs agree to enroll students within a radius of 20 to 25 miles, and they may accept students from any place in the state.

Organization and Development Within Services

The following is a brief overview of the organization and operation of the types of vocational education programs offered in the vocational high schools, comprehensive high schools, and area vocational schools in the state. The school organization in which the vocational education program is offered will vary depending on local city or community conditions. The minimum state standards for the programs, however, are met in each type of school organization.

Vocational Agriculture

Most of the vocational agriculture programs in Ohio are organized on the basis of two periods per day being assigned to the vocational agriculture instruction in grades 9-12. Provisions have been made, however, for a program providing for 1 hour per day of instruction. Students may take 2 or 3 years of vocational agriculture and then during the last years in high school also enroll in another vocational program such as trade and industrial education, distributive education, or business education.

The vocational agriculture program in Ohio is experimenting with the addition of specialized agriculture programs in such areas as landscaping, greenhouse operation, and nursery operation. There is a movement to develop land laboratories in cooperation with the high school program for purposes of demonstration projects and for use in cooperation with other science programs in the high school. Recognizing the interest in certain areas of agriculture, even in the large cities, a program in specialized areas such as landscaping and gardening has been established in Cleveland in order to enable its youth to get instruction in such areas of work. This program is approved as an additional vocational unit under the foundation program.

When a joint vocational school district is organized, vocational agriculture programs may be offered at the joint vocational school for those local school districts that do not have such programs or are operating programs with too few students. Specialized areas of vocational agriculture such as landscaping or greenhouse operation may be offered at the joint vocational school to serve all school districts in the county. It is anticipated that local districts that have strong vocational agriculture programs will retain these programs when the districts become a part of a joint vocational school district.

Distributive Education

The high school program in distributive education, for which an additional vocational unit is allotted, is limited to a cooperative-type program at the senior level, in which the students spend half a day in school and half a day on the job. During the half day in school, one hour and a half is spent on instruction related to the field of distribution, and the other hour and a half on regular academic requirements. There are a growing number of distributive education programs being organized throughout the state at the high school level to serve youth interested in entering the field of distribution, but perhaps the greatest emphasis in the field of distributive education is at the adult level. Many cities throughout the state organize courses locally for their employed sales personnel. Any community in the state can request assistance in the organization and financing of such courses.

The distributive education service also employs specialized field personnel to assist communities in organizing courses in such areas as management training, waitress training, and insurance training. The specialized personnel go into a community and conduct courses for personnel in business and industry in these areas of instruction. The distributive education service also provides institutes at the university for specialized training of sales and distribution personnel in such areas as hardware store management.

The distributive education center at Ohio State was selected as a place for the development of a two-year cooperative technical program in wholesaling. Technical education can be defined rather easily in the field of trade and industrial education, but experimentation was needed to identify the technician level in the field of distribution. This program is now in its second year, and it has the full support of a broad advisory committee in the field of wholesaling. It is anticipated that this pilot program will continue on an expanded basis, and that additional programs of this type will be added to the technical centers developing throughout the state as funds are made available.

Business Education

The state leadership for business education programs is included in the Division of Vocational Education, but at present it is limited to one professional person. Additional vocational foundation units have been made available for business education in the foundation program. Business education programs that receive foundation program assistance are limited to the cooperative type programs at the senior level, similar to those for distributive education.

The cooperative program in business education is dependent upon a sound business education program operated in the 9th and 10th grades. This basic instruction is necessary to provide the students with the basic business skills by the time they are enrolled in a cooperative program at the 12th year. Trends would point, however, to the need for adjustment in the business education programs since there is a growing need

for the introduction of elementary business-data-processing procedures at the high school level. Such instruction may require in-school vocational instruction in the 11th year, prior to the cooperative program at the 12th year. Instructions in such items as card punch and accounting machine operations would be included in the program.

Leadership sees clearly the place of business education in the joint vocational school program. There it will be possible to provide certain instruction at the 11th-year level that cannot be made available within each of the local schools because of the limited number of interested students and the high cost of equipment for adequately organized programs. In many cases the cooperative program can best operate at the joint vocational school center.

As indicated previously, two programs in the area of business data processing or computer programming were initiated on a post-high-school basis in the fall of 1962, one in Springfield, and the other in Willoughby-Eastlake. These programs are organized to prepare computer programmers and technicians for business and industry. They come under the leadership of the business education supervisor and are eligible for assistance under the National Defense Education Act.

Vocational Home Economics

The state leadership in the field of vocational home economics has provided for a very flexible home economics program in regard to the number of years the students are enrolled and the number of periods per day of instruction required. For example, girls are encouraged to consider enrolling in 2 or 3 years of home economics and also in other vocational areas in order to gain skills for earning a living.

All of the areas of vocational education recognize the importance of home economics in preparation of students for home and family living. In planning for joint vocational school districts, it is anticipated that basic home economics will be retained in each of the local schools for the benefit of all girls, and that only specialized areas of home economics instruction will be offered in the joint vocational schools for a selected number of students.

A very extensive program of adult classes for homemakers is being maintained in cooperation with the public schools of the state. Financial assistance is provided from vocational education funds for approved classes offered for homemakers within any community. One very forward-looking adult program is the Family Life Program provided in several large cities, such as Toledo. One or more full-time persons are employed in each of these cities for the organization and operation of a family life program that trains leaders in skills and technical knowledge required for working with people in their natural groupings throughout the city.

Trade and Industrial Education

The trade and industrial education programs at the high school level are limited to the 11th and 12th years. Sixty-one different trade areas are offered in the day trade programs in the public schools, and an additional 29 trade areas are offered in the diversified cooperative training program. Toledo has the broadest trade and industrial education program in the state, offering 21 trade areas for boys and girls.

In both the rural and the suburban areas, trade and industrial education is almost nonexistent. This is because many of these schools are too small to support in-school trade and industrial education programs and there are not enough industries and businesses sufficiently close to the school to offer job opportunities in the cooperative education area.

Experience in Ohio indicates that the need for adequate programs of trade and industrial education at the high school level is growing rather than diminishing. In view of the high dropout rate from school and the large number of young people walking the streets after graduating from a general high school program, we see no justification for denying trade and industrial education to high school youth.

As an example, only 62 students graduated from high school this spring for every 100 who entered the first grade 12 years ago. Of the 62 students graduating, about one-third will start to college, and only 12 will graduate.

Our experience, therefore, points toward the need for area vocational education schools. The joint vocational school district law (House Bill 620) provides a real means of expanding the services of trade and industrial education to more youth in the small cities and the rural and suburban areas. Perhaps the trade and industrial education program is the one most affected by the small size of schools and the lack of adequate physical facilities. The professional personnel in trade and industrial education are working diligently to gain acceptance for the joint vocational school district principle.

In general, the physical facilities for trade and industrial education in Ohio have been improving. The new schools now providing trade and industrial education programs have very adequate facilities for the programs. It is obvious, however, that continued improvement of instruction must take place if graduates of trade and industrial education programs are to be accepted into modern industries as the industries and trade areas become more technical in nature.

In order to [illegible] toward a program of improved instruction, trade [illegible] vement tests are being developed at the rate of one [illegible] year. Such tests will enable us to evaluate the achievements of the students in the trade areas in which they are enrolled at the completion of both the 11th and 12th years. To date, testing programs have been developed for machine trade, auto mechanics

trade, basic electricity, basic electronics, and drafting. The testing program involves the use of an intelligence test for both verbal and nonverbal abilities and a basic mathematics test, and a trade achievement test. The achievement test itself is based on the skills, technical knowledge, and principles of mathematics and science related to the trade area which the student is studying.

This testing program is conducted in the spring of each year. The tests are graded at our Instructional Materials Laboratory, Ohio State University, through the use of IBM equipment. Norms are established for the entire state, and reports are sent back to local schools indicating the scores of each student on each section of the test. On the basis of this information, the individual schools can chart the school norms in comparison with the state norms, and the achievement of each student can be compared with the school and state norms.

Experience with these tests over the past 4 or 5 years shows that they can indicate clearly to a local school the weaknesses in its instructional program. Also, they have stimulated the local centers to improve not only their instruction but also their curricula and facilities.

Another fact brought out by the tests is that certain school systems were enrolling in vocational education courses a preponderance of students with less-than-average ability, and that such students, as a general rule, were not able to achieve in accordance with the norms of students in the state as a whole. Such studies have led to the enrollment of better students in trade programs, students who can qualify for employment upon completion of the two-year program of instruction.

We find a trend in Ohio towards increased employment in the service trades and the very highly skilled trades as the number of persons employed in the field of manufacturing decreases. As examples, we find an increased need for instructional programs for girls in health areas and in such service areas as cosmetology; and for boys, in such trade areas as electricity, electronics, drafting, and auto mechanics. There is also a movement to develop instruction in other occupations, such as pressing and dry cleaning.

Throughout the skilled trade areas, increased emphasis is being placed on quality instruction in mathematics and science as related to the trade being taught. It is our experience that many students who cannot achieve in college preparatory mathematics and science still can master the functions of mathematics and science as applied to their trade areas.

Research on the results of the machine trade achievement test indicates that students who are enrolled in 3 hours of manipulative instruction plus two periods of related instruction do better in the achievement tests than do those who are enrolled in 3 hours of manipulative instruction plus only one period of related instruction. A study of the information gained from the achievement testing program indicates that it is desirable to assign to students periods of related technical instruction separate from and in addition to the periods for shop instruction. The related technical instruction must include a study of the principles of mathematics and science related to the trade. More research, however, is needed on methods of instructing students in technical information related to their trade.

Teacher education for the trade and industrial education field provides a particular problem. It is often necessary to employ a teacher without a college background in order to secure one with the necessary skills and technical knowledge in a particular trade area. Although about 60 percent of our teachers possess baccalaureate degrees, a large majority have attained the degrees while teaching.

A strong in-service teacher education program makes this possible. A teacher employed without a college degree attends a one-week preservice instructional program and is visited every other week during the first 4 years he is on the job by a teacher educator from one of our teacher education centers for trade and industrial education. In addition to the in-service program, teacher education courses are offered in the evenings and during the summers at the university centers. The cooperating university centers in which teacher education personnel are located are Ohio State University, Kent State University, the University of Toledo, and the University of Cincinnati. Each center serves an assigned area of the state. A total of nine persons are employed on a full-time basis for teacher training in trade and industrial education.

The teacher educators are employed by the university, but a portion or all of their salaries are paid from trade and industrial education funds, and they are members of the trade and industrial education staff of the state. These teacher educators meet with the total trade and industrial education staff several times each year, and some of them are on the service policy and planning committee. Instructional materials for the individualized teacher education in-service program are provided through our Instructional Materials Laboratory.

Further information concerning the teacher education program can be gained from the Ohio Manual of Operation for Trade and Industrial Education.

The only shrinkage that has occurred in the trade and industrial education adult area is in the apprenticeship-related instruction programs. This shrinkage may be caused by the slowdown in industrial activity, by changes in the employment patterns due to technological developments, or by changes in labor-management attitudes toward the apprenticeship system. The apprenticeship program is controlled by labor and management, and the future of the program is in their hands. We anticipate, however, that the related instruction for apprentices will increase as business activity regains its proper momentum.

Adult trade extension classes are growing in number. To a large extent, we attribute the success of this pro-

gram to the fine leadership personnel assigned at the local and state levels. Communities that have employed local supervisors of trade and industrial education have enjoyed a growth of services to both employed and unemployed adults. Communities that employ only teachers for selected areas of trade and industrial education do not generally develop adequate adult extension programs.

We find growth also in those areas of instruction for which we have employed specialists at the state level. Specialized personnel have been employed as follows: five persons in fire service training, including emergency rescue squad training; four persons in industrial leadership training; two persons for rural electrical lineman training; one person for a new custodial training program; and two persons for a law enforcement training program. These persons are employed as a part of the trade and industrial education staff within the state, but they are employed through university centers in order to serve better the various sections of the state. Again, these persons are employed by the university centers on contracts with the State Department of Education. The State Department of Education indicates the type of service to be performed, and the universities have cooperated to the fullest extent. The full salaries of most of the specialists are paid from trade and industrial education funds to the university centers. Travel costs are paid directly from the State Department of Education to the individual.

In the field of adult preemployment training, we have conducted for a number of years continuing practical nurse training programs. At the present time this program is provided in 14 centers throughout Ohio. In the last several years an effort has been made to provide retraining programs for unemployed persons with assistance from federal funds made available through Title I of the George-Barden Act and from certain state funds available to the Trade and Industrial Education Service, with some success. The training programs are carried out in cooperation with such agencies as the State Welfare Department, the Ohio State Employment Service, management organizations, union organizations, and others. It has been demonstrated that jobs must be available in order to plan a sound training program for unemployed adults and to place them in jobs upon completion of training. During the year 1961-62, 572 adults, selected from the unemployment rolls of the state, were enrolled in training programs.

In its 1961 session, the Legislature passed the Ohio Worker Training law requiring the establishment of a worker training committee at the state level and a worker training committee in any local community desiring to participate in funds made available through the state worker training committee for the retraining of unemployed adults. Although the total retraining program under this act is directed by the state committee, the organization and supervision of adult training programs are assigned to the Division of Vocational Education in the State Department of Education; and the funds made available under the act are assigned to the Department of Education for administration.

The Ohio Worker Training Committee has established procedures and policies for the operation of the training programs they will assist. The committee has established rates of a maximum of $5 per hour for instruction; $3 per hour for heat, light, building, and maintenance; and $2 per hour for instructional supplies. It is not intended that these funds cover the full cost of instruction, but rather that they should help a local community to meet its own obligations in retraining the unemployed. The act also provides that the vocational education services within the state will assist in bearing the cost of instruction for such retraining programs to the extent that their budgets permit.

Projects for retraining unemployed persons have been approved under the National Area Redevelopment Act for instruction in electronics at Cambridge and in machine operation at Martins Ferry. Other requests for training programs have been submitted through the Department of Labor Area Redevelopment Act regulations.

Another area of assistance provided by the Trade and Industrial Education Service of the State Department has been the Instructional Materials Laboratory, developed and maintained at Ohio State University. The purpose of the laboratory is to develop new instructional materials in vocational areas at both the high school and the adult levels. An annual budget of $20,000, plus the salaries of several professional personnel, is invested in the laboratory. In addition, sales of instructional materials from the laboratory help to maintain the reissue of the materials and to publish them in an attractive and usable form. The yearly expenditures of the laboratory for the production and publication of new materials and the rerun of existing materials total about $60,000.

The Instructional Materials Laboratory has had the full support of our local supervisors of trade and industrial education throughout the state. A number of years ago, when funds were restricted, the people throughout the state voted that we should use the limited funds for the expansion of the laboratory rather than for increasing reimbursements to the local communities.

University Branches and Community Colleges

There are no publicly supported community colleges in Ohio at the present time. The various universities have established branches in several cities, utilizing the facilities of the public schools. Such branches are operated directly by the universities, and they provide instruction in the first 2 years of basic college work. The branches do not offer any technical education programs as defined in this paper.

The last session of the Legislature passed a community college bill and a technical institute bill. The community college bill established a board, separate from the State Board of Education, to administer the program, and it made the county commissioners the legal entity for establishing community colleges. Under the provisions of the bill, the public schools have no part in the program. The Legislature provided no funds to assist in the establishment of community colleges.

The technical institute bill merely made it legal for any group of county commissioners to organize a technical program. The bill, however, did not provide for any state leadership or financial assistance.

Appraisal of the Vocational Education Program in Ohio

I would judge the following to be outstanding features of the program.

1. Strong leadership at the State Department level, both within the services and at the head of the division, and community acceptance of state leadership as an aid to program development and improvement rather than simply for inspection.

2. A close staff relationship within the various vocational services at the state and local levels and a clear division of responsibilities among the various services and personnel at the state level.

3. The development of manuals of operation to provide adequate information for local communities concerning sound program standards within the various service areas.

4. The services provided by the Vocational Education Division of the State Department to help local communities evaluate existing programs and to establish new programs.

5. The employment of specialized field service personnel to give leadership to special areas of education throughout the state and the utilization of such personnel to train a corps of part-time instructors in local communities or industries to meet local needs quickly, effectively, and economically.

6. State services in the area of instructional materials development and testing.

7. Emphasis upon the employment of leadership personnel within the local community for the development of programs, particularly in the trade and industrial education area.

8. Trends toward increased programs for high school youth through the support of public school administrators and the passage of House Bill 620.

9. An increase in the number of short courses for employed adults and homemakers.

10 The growth of post-high-school technical education programs.

11. The growth of retraining programs.

The weak features appear to be:

1. The need to extend vocational education to a larger number of youth and adults in the state.

2. The need to improve the quality of instruction in keeping with the changing needs of the industrial economy.

3. The need for the enrollment of more students who are capable of achieving a level of skill and technical knowledge that will enable them to be accepted into the highly skilled trade areas with quality companies.

4. The need of funds to make the joint vocational school district organization a reality.

5. The need to develop organized vocational programs along with other appropriate programs to serve the students who fall roughly into the 70 to 90 I.Q. range.

6. The need to improve salary schedules at the state level so that the strongest leadership in the local programs can be attracted into the State Department.

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Appendix to Part I

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Example of a Basic Classroom Unit Foundation Formula for Determining State Support of Elementary and Secondary Education in a Hypothetical State

By Stanley E. Hecker[1]

Basic Classroom Units (BCRU)

Brown School District educates 2,000 pupils (K-12) and contains considerable land area. It has one central high school (9-12), three consolidated elementary schools (K-6), one isolated one-teacher school (K-6), and one nonisolated one-teacher school (K-6). (State law and/or State School Board regulation defines "isolation" and "division factor.") The total basic classroom units are calculated as follows:

Type of School	*Membership*	*Divisor*	*BCRU*
One teacher (nonisolated)	15	30	.5
One teacher (isolated)	12	—	1.0
Elementary	180	22	8.2
Elementary	500	30	16.7
Elementary	720	30	24.0
Secondary	573	30	19.1
	2,000		69.5

Vocational Classroom Units

Brown School District is partially rural and partially urban. It has (1) sufficient pupils, (2) adequate facilities, (3) an approved program, and (4) certificated teachers in vocational agriculture, vocational home economics, and trade and industrial education. (State law and/or State School Board regulation defines 1, 2, 3, and 4 above.) State approval is granted for the following additional classroom units for vocational education:

Service	*Classroom Units*
Vocational agriculture	1.0
Vocational home economics	1.0
Trade and industrial education	1.0
	3.0

Special Education Classroom Units

Brown School District has (1) sufficient pupils, (2) adequate facilities, (3) an approved program, and (4) certificated teachers to provide special programs for the physically and mentally handicapped. (State law and/or State School Board regulation defines 1, 2, 3, and 4 above.) State approval is granted for the following additional classroom units for these special services:

Service	*Classroom Units*
Physically handicapped	2.0
Mentally handicapped	1.0
	3.0

Subtotal of Classroom Units

The sum of "classroom units" to this point is:

Basic classroom units	69.5
Vocational classroom units	3.0
Special education classroom units	3.0
	75.5

Administrative and Special Instructional Services (ASIS)

State law permits additional CRU credit for "Administrative and Special Instructional Service (ASIS)" personnel at the rate of one additional unit for each six units in the subtotal. Brown School District's entitlement is 12.6 units (75.5 divided by 6). Brown School District employs properly certificated personnel for the following approved positions:

Service	*Classroom Units*
Superintendent	1.0
Assistant superintendent	1.0
High school principal	1.0
Assistant high school principal	.5
Elementary principal	2.0
High school librarian	1.0
High school physical education	2.0
Music (instrumental and vocal)	2.0
Industrial arts	1.0
Art	1.0
Elementary librarian	1.0
	13.5

[1]Assistant Professor, College of Education, Michigan State University.

Since the number employed exceeds the number permitted under law, credit will be *given for only 12.6* classroom units. (Had Brown employed fewer than 12.6 *qualified* personnel for these positions, they would not have received 12.6 CRU credits.)

Supervisory Classroom Units

State law provides that a district may receive credit for a supervisory CRU for each 100 or major fraction thereof of CRU's in the subtotal. Brown's subtotal is 75.5, and therefore it receives credit for one (1.0) additional CRU. The additional CRU is for a person qualified as a general program supervisor.

Summary of Educational Need

Basic classroom units	69.5
Vocational classroom units	3.0
Special education classroom units	3.0
Subtotal	75.5
ASIS classroom units	12.6
Supervisory classroom unit	1.0
Total	89.1

This completes the calculation of "educational need" as defined by State law and/or State School Board regulation. The next step is to translate this "educational need" into "financial need." (Financial need for "transportation" is dealt with separately.)

Instructional Salaries

The Foundation Program law sets up categories or "ranks" for instructional personnel based upon level of education. Each "rank" is assigned a monetary value — an allotment schedule, *not* a salary schedule. (In most cases it has been necessary to tie a statewide minimum salary for teachers to the allotment schedule.)

Table 1 shows how the 90 instructional personnel employed in Brown School District are "ranked" and how these ranks are converted to "financial need." The nine-month salary allotment totals $469,420. Additional funds are calculated for those persons and positions approved for employment beyond the nine-month school term. (Superintendent, 3 months; Assistant Superintendent, 3 months; Principal, 1 month, etc.). Total "Instructional Salary Allotment" totals $474,534. *This amount or more must be expended for the 89.1 approved classroom units.*

Other Current Expenses

State law allots $1,500 per classroom unit for "other current expenses." This amount is *not earmarked* and may be used for whatever purpose the local district may choose, such as to supplement teachers' salaries, to hire additional personnel, or to expand bus system.

Brown School District's allotment for this section of the law is 89.1 times $1,500 or $133,650.

Capital Outlay

State law allocates $500 per classroom unit for capital outlay. *These funds are earmarked and must be used:* (1) to retire existing indebtedness, (2) to retire new indebtedness, (3) for annual capital improvements, (4) for capital improvements at a future date.

Brown School District's allotment for this section of the law is 89.1 times $500 or $44,550.

Transportation

Financial need for transportation is the only section of the Foundation Program that is not directly related to "classroom units." It is developed under a separate formula not dealt with here. Brown School District, however, has a financial need for transportation of $40,000.

Summary of Financial Need

Instructional salaries	$474,534
Other current expenses	133,650
Capital outlay	44,550
Transportation	40,000
Total financial need	$692,734

Sharing the Cost

The State in which Brown School District is located uses the State Equalized Valuation (SEV) of property and a required local tax effort (deductible millage) to determine the local share. *The SEV of Brown District is $40,000,000 ($20,000 per pupil), and the deductible millage is 10 mills.* Brown School District's share, therefore, is $40,000,000 times 10 mills or $400,000. The state's share is the balance, calculated as follows:

Total financial need	$692,734
District's share	400,000
State's share	$292,734

Table 1

Calculation of Instructional Salary Allotment

Rank	Education Level	Allotment Schedule	Number of Personnel	9-Month Salary Allotment	Extra Months Employment	Allotment Per Month	Extra Month Allotment	Total Allotment
I	MA+30	$6,000	9	$ 54,000	6	$667	$4,002	
II	MA	5,500	30	165,000	0	611	——	
III	BA	5,000	50	250,000	2	556	1,112	
IV	—BA	4,200	0.1	420	0	467	——	
			89.1	$469,420			$5,114	$474,534

Note: In most cases it has been necessary to tie the statewide minimum salary for teachers to the allotment schedule.

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709 South Westnedge Avenue, Kalamazoo, Michigan

- ☐ *Education and Training for the World of Work: A Vocational Education Program for the State of Michigan.* Harold T. Smith. July, 1963. 165 pp.
- ☐ *Are Wages High in Detroit?* Henry C. Thole and Harold C. Taylor. July, 1963. 86 pp.
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- ☐ *Death of a Newspaper: The Story of the Detroit Times.* Louis A. Ferman. April, 1963. 63 pp.
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